

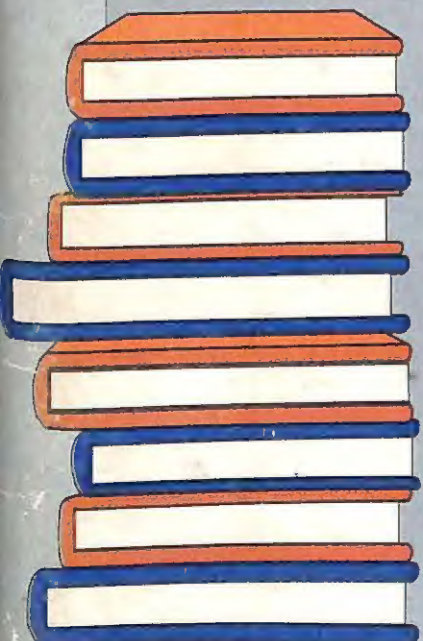
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SELF-LEARNING MATERIAL FOR TEACHER EDUCATORS

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Volume II



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

Self-Learning Material for Teacher Educators

Volume II

G.L. Arora R.K. Chopra

Editors



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Foreword

The State Councils of Educational Research and Training (SCERTs) have been established in almost all the States and the Union Territories in the country with a mission to guide, support and assist the State Education Departments in their endeavour to improve the quality of school education and teacher education. They are also expected to plan, implement and evaluate programmes and activities in the area of school education and teacher education at the state level.

It has been observed that the faculty members posted in these institutions have been drawn from secondary school cadre and very few have the experience of working in elementary schools or elementary teacher education institutions. Some of them, because of their long association with the SCERTs have acquired the required competence to perform the functions expected of the SCERTs during the past three decades. Since the positions in most of the SCERTs and the Directorates of Elementary School Education are interchangeable, the faculty members are either transferred to their parent departments or they are reverted to their departments on account of promotion, etc. In the absence of a separate cadre of teacher educators, the new recruits have little experience of undertaking research, development and training programmes in the area of elementary education. Hence, it is essential to orient the newly appointed SCERT faculty to the functions and responsibilities they would be called upon to discharge in an institution like the SCERT. In this connection, NCERTs Department of Teacher Education and Extension has developed self-learning materials comprising eleven modules relating to the functions and responsibilities of the SCERT faculty. I am thankful to the experts who responded to our request and prepared the modules assigned to them. I am also grateful to Prof. V.K. Sabharwal, Prof. J.S. Grewal and Prof. J.S. Sood who have painstakingly reviewed them. I appreciate the sincere efforts made by my colleagues Dr G.L. Arora and Dr (Smt.) R.K. Chopra who have edited the present volume which will prove useful not only for the SCERT faculty but also for teacher educators working in institutions like District Institutes of Education and Training (DIETs), Colleges of Teacher Education (CTEs) and university education departments. We shall always welcome suggestions from the readers to improve the quality of the material.

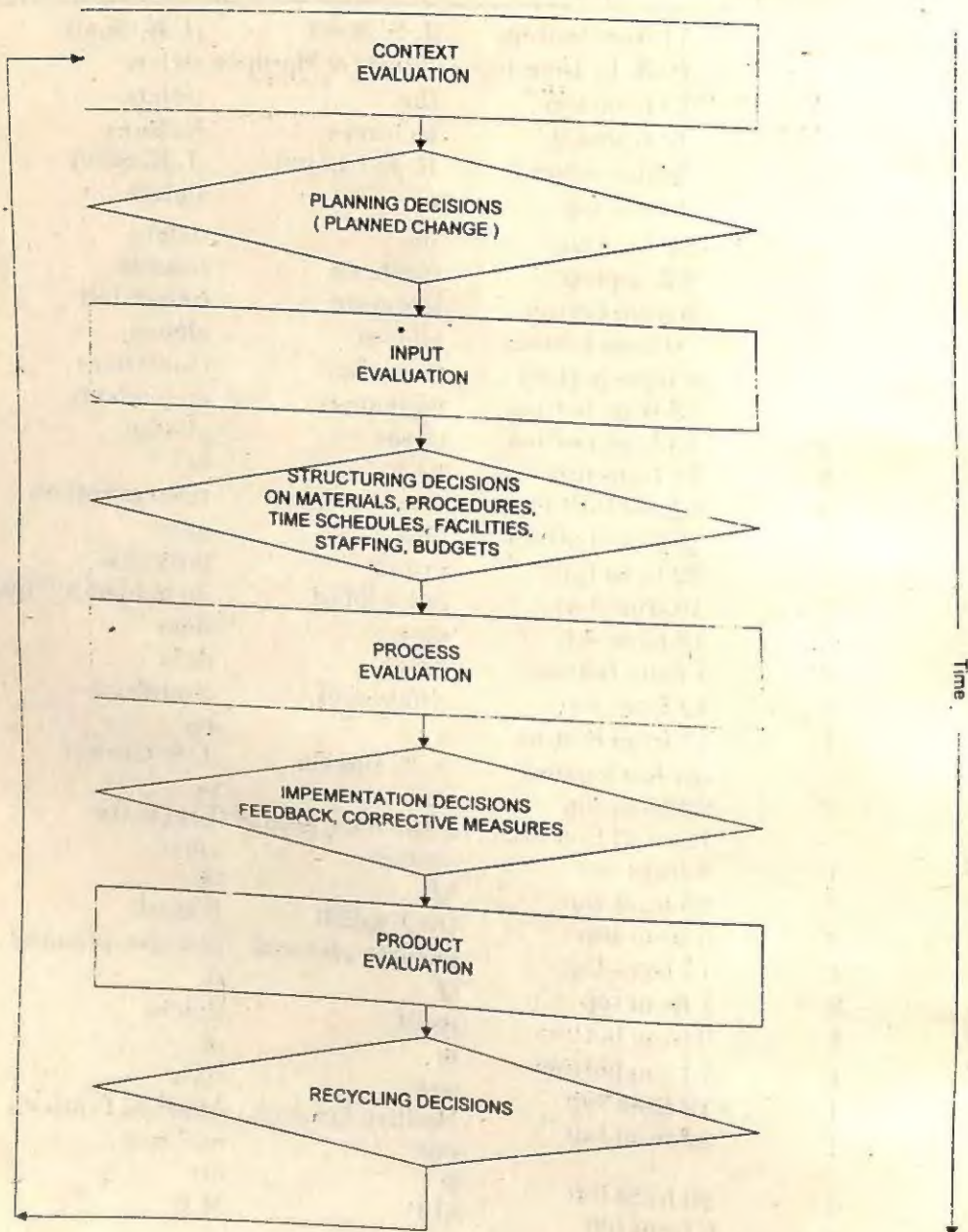
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Director

National Council of Educational Research and Training

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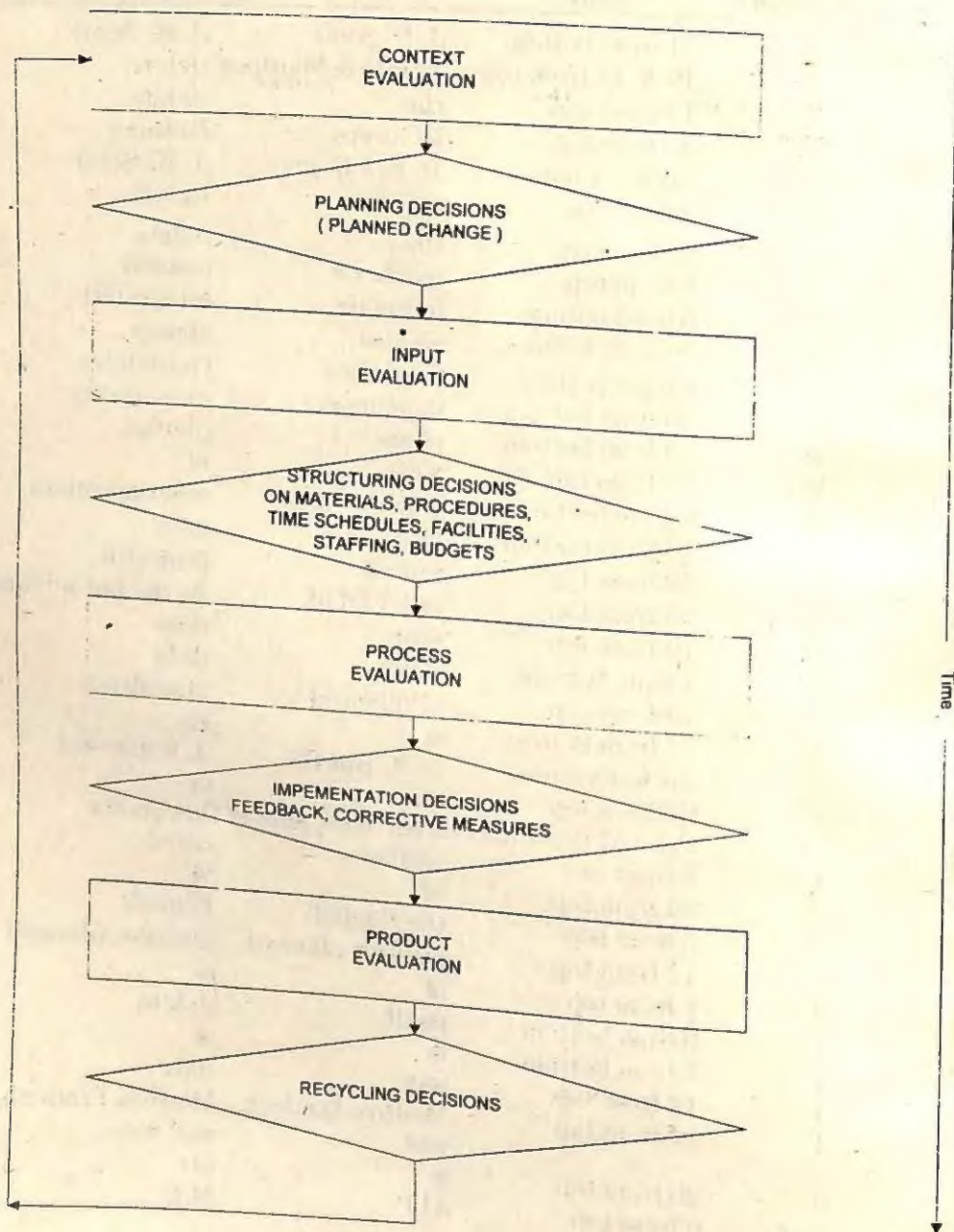


CIPP Model—Schematic Diagram

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SCERT : Role and Functions

R.K. Chopra

1. Overview

The State Institutes of Education (SIEs) were established during the mid-sixties in the country to work for qualitative improvement of elementary education through organisation of inservice training for teachers and supervisors, execution of research and extension activities, and development of instructional materials. In this module the roles and functions of SIEs and SCERTs have been discussed.

2. Objectives

After studying this module, you will be able to:

- ☐ Understand the development and present status of SCERTs;
- ☐ Reflect on institutional goals of SCERTs; and
- ☐ Describe various activities which could be taken up to achieve the institutional goals.

3. SCERTs

3.1 Development and Present Status

The Government of India initiated a scheme for setting up the State Institutes of Education in different states as far back

as 1963 for qualitative improvement of school education in general and elementary teacher education in particular. Though initially only major states started these institutions, many other states followed suit in view of the need for such academic institutions to co-ordinate all academic projects in every state or union territory.

Subsequently, in the course of time, in some states, specialised Institutes/agencies/units were established in some other specific areas like science education, English language teaching, educational technology, vocational guidance and counselling etc. Later on, when the number of the institutions/units meant for providing academic support to school education increased, the need for effective coordination among them arose. In 1978, the Ministry of Education and Social Welfare recommended that all such existing institutions or various units in the State Education Department be merged into a single organization and designated as the State Council of Educational Research and Training (SCERT). The process of upgradation of SIEs to SCERTs started during the mid-seventies. However, the SCERT in

Andhra Pradesh had been set up way back in 1967. In some states the nomenclature of SIEs remained the same but with increased functions and responsibilities.

SCERTs/SIEs have been set up in almost all the States/UTs in the country. At present, 22 states have SCERTs while 7 others viz., Arunachal Pradesh, Goa, Jammu and Kashmir, Kerala, Sikkim, Manipur, Andaman and Nicobar Islands and Chandigarh (UT) have SIEs. Four the Union Territories namely Pondicherry, Daman & Diu, Dadar and Nagar Haveli and Lakshadweep have neither an SCERT nor SIE. However, the academic functions in these UTs are being looked after by the academic wings of State Education Departments or State Training Centres, of these some have been recently upgraded as DIETs.

Each SCERT has its own structural arrangement to facilitate execution of its functions. The academic activities and programmes in an SCERT are carried out by its various departments/units/wings. Generally, the SCERT is headed by a Director who is assisted by the Joint Director/Deputy Director, Readers, Lecturers/Research Officers and Subject Specialists/Technical Assistants. The question of providing autonomous status to the SCERTs as envisaged in the scheme, is being pursued in many States/UTs. The SCERTs of Delhi and Kerala States have already been established as autonomous bodies.

Activity Prepare an organizational chart of your SCERT showing different Departments / Units along with the posts provided in each of them.

3.2 Role and Functions of SCERTs

3.2.1 Earlier Role : The objectives of SIE envisaged initially included organization of inservice education for teachers and supervisory personnel dealing with elementary schools and the faculty of elementary teacher training institutions, research in elementary school education and elementary teacher education, and development of instructional materials for school teachers and teacher educators at the elementary level. They were also expected to coordinate the work of extension service centres located in the elementary teacher training institutions. With the passage of time, when different independent institutions were merged in the nationally recommended set-up of the SCERTs, the functions of these institutions were also extended to secondary education including secondary teacher education. They were also required to organize inservice training and orientation programme for all categories of educational personnel. Their other functions included development of curriculum and instructional materials including textbooks and supplementary books, conducting research and undertaking extension activities.

3.2.2 Changing Role : The National Policy on Education (NPE) 1986 and its POA envisaged additional role and functions for the SCERTs. The SCERT which is visualised as an apex organisation in education at the state level, is expected to guide, support and assist the state education department in its mission to improve the quality of school education and teacher

education. It will also function as the state resource institution to provide academic support to all stages of school education from pre – primary to senior secondary stage of education.

There are, however, variations in the functions of the SCERTs related to pre-service education. In some states, the SCERTs look after pre-service education upto the elementary education level while in some other states their jurisdiction extends to secondary teacher education also. The SCERT as an academic institute shall plan and coordinate all academic projects and programmes in the state. Besides, the SCERTs shall also play an advisory role at the state level in connection with academic aspects of school education. In pursuance of the recommendations of NPE – 1986, resource institutions like District Institute of Education and Training (DIET) have been set up at the district level. The SCERTs have the mandate to supervise and support these institutions in order to facilitate their operationalization and effective functioning.

Activity Compare the earlier and changing roles of the SCERTs and give your comments about how the new roles are being discharged by the SCERT in your State/UT.

3.3 Types of Activities and Programmes of SCERTs

In view of the emerging roles of SCERTs, it is envisaged that the following types of activities and programmes can be undertaken by an SCERT to achieve their institutional goals:

3.3.1 Research : Research is one of the major functions of the SCERTs/SIEs. The staff members are expected to conduct research studies related to the significant educational problems of the state to improve the quality of elementary and secondary education and teacher education. Besides, they are to conduct status studies and educational surveys to get benchmark data and develop information system related to school education and teacher education in the state for policy planning and management.

In this connection, the following are some of the pertinent educational problems that need to be attended by the SCERTs: Identification of Minimum Levels of Learning in primary classes, causes of low enrolment and retention, causes of high drop-out rate, stagnation and pupil absenteeism, poor performance, common errors in language and mathematics, low admission in science stream, indiscipline among students, study habits, educational and vocational interests of students at secondary level, strategies for improving pupils' evaluation procedure, selection procedure of student teachers in DIETs etc. These problems need immediate attention of the SCERTs/SIEs for quality improvement of school education in most States/UTs.

3.3.2 Development : The development of curricular policies, syllabi and instructional material, print and non-print, both for formal and non-formal education system come under the purview of the SCERTs. The staff of SCERTs are expected to provide academic support and guidance to State Education Department in the formulation of policies in all matters related to school education, particularly elementary education. In view

of this, they can review school syllabi, textbooks, workbooks from time to time; develop various types of instructional materials, teachers' guides, supplementary materials, textual materials, training packages, audio-visual materials, and evaluation tools and also translate books in regional languages. Besides, development of strategies and instructional materials for vocationalisation of secondary education in the state need immediate focus on the SCERTs.

Considering the importance of supervision and inspection in quality education, the SCERTs/SIEs may undertake the task of developing criteria for inspection and supervision of elementary schools at Block level.

3.3.3 Training : Continuing education of teachers, supervisors and other educational personnel in the system is an important function of the SCERTs/SIEs. They are also expected to plan, implement, monitor and evaluate all pre-service and inservice teacher education programmes, particularly at elementary level in the state. Almost all the SCERTs/SIEs have made a good attempt in organising various short duration as well as long duration inservice training/orientation programmes for schools teachers of different levels, master trainers and resource persons with the help of the DIETs. A good number of the SCERTs/SIEs have started acting as nodal agencies for operationalization of the centrally sponsored scheme of DIETs. They are expected to play a major role in developing pre-service teacher education curriculum and training materials for the DIET faculty, organize need-based training programmes for them, monitor

and evaluate their programmes and activities. They should also familiarise the DIET faculty with the latest technology for organizing inservice education of teachers.

3.3.4 Extension : Extension is one of the basic functions of the SCERT. The SCERT is expected to function as a think tank of the State Department of Education to promote innovations and action research for improved practices in school education and teacher education. For this, the SCERT should organise workshops for school teachers and the DIET faculty to guide them to design action research projects and evolve/replicate innovative practices to improve classroom teaching and other institutional programmes. In-house staff development activities – seminars, talks, conferences, research colloquia, panel discussions, extension lecturers on latest developments and emerging problems in education by eminent academicians and scholars may be organised from time to time.

It has been observed that most of the SCERTs/SIEs organise district and state level science seminars, fairs and exhibitions, paper writing competitions for school teachers to promote innovative practices, poetical recitation, competition and quiz contests. They provide training to students for science talent search examinations, organize community awareness programmes and state level toy-making competitions.

3.3.5 Dissemination : Most of the SCERTs/SIEs bring out reports of the research studies, newsletters, journals/magazines, annual reports etc. They also disseminate important data, information, significant research findings

through their newsletters/magazines and annual reports to the concerned institutions.

3.3.6 Linkages of SCERT with Other Institutions : Since the SCERT occupies the apex position in the organizational pattern of school education, it is essential that it should establish academic linkages and coordination with all other departments/institutions working for elementary and secondary education in the state.

In the field of elementary education, the Directorate of Education, Department of Adult and Non-formal Education, and District Institutes of Education and Training (DIETs) are the main institutes with which the SCERT should have close relations and coordination. The SCERT is expected to guide and assist the State Education Department, Department of Adult Education and NFE in the formulation and implementation of policies and activities of elementary education. It is also expected that the SCERT faculty should provide academic guidance and support to the DIETs in their efficient functioning. It should be responsible for the development of pre-service elementary teacher education curriculum and instructional materials and organization of continuing education for the DIET faculty.

In the area of secondary education, the Directorate of Vocational Education, the Boards of Secondary Education, University Department of Education, Colleges of Teacher Education (CTEs), Institutes of Advanced Studies in Education (IASEs) and other secondary level teacher training colleges preparing teachers for secondary education are the main institutions concerned with the

educational development, training and research. Therefore, the linkages of the SCERT with these institutions of higher education system should be intimate and functional to the extent that while designing the teacher training programmes, all these institutions should be actively involved. In the areas of evaluation, research and innovations, the SCERT can seek guidance and sometimes undertake research and prepare evaluation tools for testing the pupils in collaboration with the CTEs, IASEs and University Departments of Education. Besides, the SCERT can involve various faculties of universities in formulation of curriculum and instructional materials for the senior secondary stage. The CTEs and IASEs are affiliated to universities and therefore, they are guided and supervised by them in all academic matters. Besides, the SCERT should have representation in the University Boards of Studies and have a say in their academic matters.

In the area of pre-school education, the SCERT is expected to prepare syllabus and guidelines for organising the play activities at the child play centres. *Aanganwadies, Balwadies*, etc. The Integrated Child Development Scheme (ICDS) run by the Social Welfare Department has only health and nutrition components. As per the National Policy on Education - 1986 and its revised version in 1992, the education component is also to be incorporated at this stage. For this, the SCERT should have close contact with the Social Welfare Department and other voluntary agencies which organize the pre-school/early childhood education centres.

The District Primary Education Programme (DPEP) launched in 1993 to

improve the quality of primary education in some states in the country has created a parallel structure for the preparation of curriculum, instructional material and teacher training. It is a centrally sponsored scheme based on the concept of contextuality and decentralised planning, aims at the development and implementation of a replicable, sustainable and cost-effective system to reduce overall dropout rates and raise enrolment and learning achievement levels of children at primary level. The programme envisages strengthening the capacity of national, state and district level institutions for the planning, management and evaluation of primary education. In this context the SCERTs/SIEs should establish suitable linkages with the state DPEP offices in order to help them to improve the quality of primary education through planning, monitoring and evaluation of in-service training of primary teachers and other functionaries at state, district, cluster and block levels. The SCERT should come forward to provide training input to key persons of the district level nodal agency i.e. the DIET who shall train the resource persons at the block level (BRC) and who in turn would train the primary school teachers at the cluster level.

The above description reveals that the expectations from the SCERT are very comprehensive and concrete. The institution is supposed to become a nodal agency for promoting excellence in the field of elementary education in all significant aspects. It is also supposed to be a centre of research. These expectations can be realised only if SCERT is strengthened with adequate physical, human and financial resources. A resource centre like the SCERT, as

envisaged, will have to assist not only the state government sponsored efforts but also voluntary organizations and private bodies working in the field of elementary education and also to elicit support from them. The SCERT should also take into account various specific groups of population which deserve relatively greater attention. This will include girls, scheduled castes and scheduled tribes and other educationally disadvantaged groups like the disabled, minorities, working children, inhabitants of remote and far-flung areas. Thus, the programmes and activities contributing to the UEE should receive high priority in the working of the SCERT.

Activities

1. Compare the performance profile of your SCERT with any other SCERT. Prepare an analytical report of about 5-6 pages and discuss it with your colleagues.
2. Describe the various ways in which your SCERT has provided academic support to the DIETs. Give examples.

4. Let Us Sum Up

The State Institutes of Education came into existence during the mid-sixties for qualitative improvement of elementary education in the country. In the beginning their functions comprised organization of in-service training for teachers and supervisory personnel, extension activities research, and publication of instructional material. Subsequently, in the course of time, all academic institutions/agencies working with different aspects of school education like Institute of Science Education, Educational Technology and

Language Education Institute etc, were merged with the SIEs and they were designated as State Councils of Educational Research and Training with additional roles and functions. The NPE-1986 and its POA envisaged additional roles and functions for the SCERTs. The SCERT is expected to act as an R & D institute at the state level by providing guidance, support and assistance to the State Education Department in its endeavour to improve the quality of elementary and secondary education and teacher education. To achieve this goal, the SCERT is expected to conduct research studies, develop information system, curricular policies, syllabi and instructional materials—print and non-print for formal and non-formal education, coordinate inservice education for teachers at all levels through the DIETs, CTEs and IASEs,

develop strategies for improving pupils' evaluation procedure, instructional materials for vocationalization of secondary education. It is also expected to establish academic linkages with all the departments/institutions working for the common cause.

Review Exercises

1. Why were SIEs upgraded as SCERTs?
2. What are the emerging roles of the SCERTs? How are these different from the initial roles assigned to the SIEs?
3. What types of programmes and activities should your SCERT/SIE undertake to achieve its institutional goals? Support your answer with examples.
4. What steps should the SCERT take to establish meaningful linkages with the State DPEP office?

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Elementary Education *Need for Quality Improvement*

R.K. Chopra

1. Overview

In last five decades expansion of education has taken place on an unprecedented scale. Today, there is fifty in two percent literacy and Kerala as well as Tamil Nadu have achieved cent percent literacy. Yet much remains to be done.

The Constitution of India, in its Article 45, has clearly mentioned that 'the state shall endeavour to provide within a period of ten years from the commencement of this Constitution for free and compulsory education for all children until they complete the age of fourteen years'. Consequently, a number of efforts were made to achieve these targets. However, due to diverse and uneven regional contexts and lack of community participation, the problem continues to be with us.

The National Policy on Education-1986 reiterated its support for the Universalization of Elementary Education (UEE). The Programme of Action - 1992 has provided much needed guidelines in this direction. Further, attempts have been made to secure universal elementary education by providing

decentralised management of education through 73rd and 74th amendments of the Constitution. 'It is only a vibrant local body that can mobilise the local community and create the environment necessary to extend the grasp and reach of the school'. To achieve the desired goal needed changes were initiated. It has now been realised that the input oriented policies were not adequate. Therefore, open access, quality and decentralised education should go simultaneously. Consequently, access, equal educational opportunity and area specific thrusts were initiated. It was decided that universalization of elementary education (UEE) needs a holistic approach where along with formal schooling, schemes of non-formal education (NFE) and Alternative Schooling should be implemented by the non-government organizations (NGOs). The National Policy on Education - 1986 envisages that quantity, quality and achievement of minimum levels of learning shall be possible only through participatory approach and commitment as the traditional approach to primary education is not likely to deliver the desired results. Therefore,

District Primary Education Programme (DPEP) with strong emphasis on area specific planning, social mobilisation and innovative use of media and communication has been launched.

There is a deep concern about the quality of elementary education which influences access, retention and learning achievement. In this direction curriculum renewal, innovative methods of teaching, instructional materials, teacher education improvement through DIETs and decentralisation of education management are the essential elements. Microplanning and participatory mission-approach through DPEP will strive towards quality education. Qualitative improvement will enhance performance of the individual learner, reflect standards of institutions and outline the efficacy of policy programmes of the system as a whole. In this module, you will come across all these efforts attempted in India with a vision that the right to education is a basic fundamental human right.

2. Objectives

After studying this module, you will be able to :

1. examine the status of universalization of elementary education in India;
2. discuss the concept of quality in education;
3. identify the quality indicators in elementary education;
4. explain the efforts initiated to enhance quality in elementary education, such as:

- ☐ curriculum;
- ☐ methods of teaching;

- ☐ instructional materials and
- ☐ evaluation

5. discuss the role of SCERTs and DIETs in teacher education improvement;
6. explain the significance of decentralisation of management of education; and
7. discuss the philosophical imperatives of DPEP and NFE/AS.

3. Elementary Education : The Indian Scenario

The Constitution of India has clearly mentioned in Article 45 that 'the state shall endeavour to provide within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years'. Thus, we should have achieved the target of UEE by 1960. But this has proved elusive.

Today, there is 52 per cent literacy in the country. There are primary schools available within a walking distance of one kilometre to 94.5 per cent of the rural population and 83.89 per cent of population have an upper primary school within a distance of three kilometres. Similarly, it has been realized that in its totality UEE includes three elements, namely,

- ☐ Universal access for all children up to the age of 14 years;
- ☐ Retention and completion through formal and non-formal and alternative schooling programmes; and
- ☐ Learning achievement of at least of minimum levels of learning.

It appears that the objective of UEE needs further rethinking. The All India Educational Survey conducted by the

NCERT in 1986 had indicated that 50 percent of children do not complete five years of primary schooling. Half of the learners enrolled in Class I dropped out before completing the primary education. Similarly, this drop-out rate continues at the secondary level and more than fifty percent of the students fail in the first public examination (Maheshwari, 1997). Therefore, new thrusts in education have been initiated to improve the health of the system. The NPE 1986 has very aptly mentioned:

'The new thrusts in elementary education will emphasize two aspects:

1. Universal enrolment and universal retention of children up to the age of 14 years, and
2. A substantial improvement in the quality of education'.

It has been realised that just opening of new schools will not suffice as the main problem was of stagnation and wastage due to failure and drop-out. Consequently, a centrally sponsored scheme known as the Non-Formal Education (NFE) programme was launched during the seventies in the educationally backward states for organising part-time education programmes for children of the age group of 6-14. Similarly, the National Adult Education Programme (NAEP) was launched in 1978 to improve literacy among the adults. Recently, the DPEP has been launched in 1993. The DPEP is trying to implement NFE through a new approach 'Alternative Schooling'. It has been realised that education is a human right and to provide qualitative education we have to break new grounds, initiate new

approaches, seek cooperation and practice participatory mission approach which will be based upon micro-planning, area specific need, and community commitment.

3.1 *The Concept of Quality in Education*

In 1990, the World Conference on Education for All (EFA) was held at Jomtein in Thailand. In this conference, it was decided that a holistic concept of basic education in lieu of sectoral approach needs to be taken to achieve the goal of EFA by 2000 A.D. Since then, an emphasis was laid in our country on the educational needs of the working children, girls and disadvantaged groups and issues of process, content and quality has been given special attention. Earlier the Asian Regional Ministerial Conferences held at Colombo (1978) and Bangkok (1985) had given special emphasis to qualitative improvement as an essential part of educational development.

The concept of quality in education is varied and multi-dimensional. Quality refers to the degree of excellence, a characteristic of its distinguishing features reflecting its basic nature. At the level of individual learner, it is expressed in the quality of his learning, the knowledge, the understanding and skills acquired both in terms of breadth and depth and the extent to which the potential of the student is realised. It applies to all students at different stages of education. At the institutional level, quality is expressed in the high standard of performance and the way in which learners are helped to realize

them. At the level of system as a whole, quality is expressed in terms of policies which facilitate learning in students and the climate of achievement and creativity in the institutions (Singh, 1986).

Dave (1993) has conceptualised or defined educational quality as the achievement of desired learning at the mastery level. Here, 'desired learning' refers to a variety of competencies in different areas of learning and life in the form of knowledge, understanding, application and problem solving, critical and creative thinking, practical and productive skills, as well as attitudes and values. Thus, they are related to the objectives and content of curriculum, teaching-learning processes and teacher education. Similarly, 'achievement' and 'mastery' are related to the learner and the examination system. Thus, achievement of desired learning should be at high level of proficiency. Quality in education reflects the level of attainment of the learner.

This concept of quality of education comprises various educational factors, such as, infrastructure provided in schools, curriculum transaction, teaching-learning process and performance of teachers. The qualitative aspect of education system is quite low. Dropout rates, percentage of public examination failures and measurement of learning gains by students discloses that the system is at low performance mark. Therefore, there is a need to improve the following quality indicators in education:

- ☐ Curriculum transaction
- ☐ Teaching-learning process

- ☐ Teacher and his training
- ☐ Infrastructure
- ☐ Examination system
- ☐ Learning environment of the learners
- ☐ Alternative modes of learning
- ☐ Use of multimedia approach
- ☐ Educational management

Ayyar (1996) has very aptly mentioned that UEE is contextual and can be achieved only if the issues of quantity, quality and educational management are simultaneously addressed. He has further suggested that the three dimensions of educational reform are the pedagogic content, pedagogic process and management process. Perhaps, Indian education needs simultaneous efforts on all the three fronts mentioned above.

CHECK YOUR PROGRESS

1. What is the present status of elementary education up to Class VIII in your state?
2. Define quality in education in your own words.
3. Identify quality indicators in education.

3.2 Attempts Made to Promote Quality

The issue of quality of elementary education has broader perspective which includes curriculum renewal, methods of teaching, instructional material and evaluation. This conceptualization also includes the interactions going on between teachers and pupils. Thus, quality in elementary education becomes a

dynamic perspective focusing on actions and activities organized in schools.

3.2.1 Curriculum : The NPE - 1986 has envisaged a system of education based on 'National Curricular Framework', containing a common core along with the academic components. School curriculum meets the personal needs of learners, societal needs and needs of the discipline. It includes common core components and also outlines minimum levels of learning. Both these elements provide directions to quality and equality to be maintained by different types of schools. It also lays emphasis on equality of content and fulfil socio-cultural considerations, pedagogical concerns and constitutional imperatives. Consequently, content related to the environment, population, preservation of cultural heritage, constitutional obligations, character building, conservation of national resources and small family norm. The instructional material developed to meet these requirements can provide regional and local examples. It should also include related socio-economic activities of that place or area. It has been envisaged that curriculum renewal process should be based upon innovations and research.

3.2.2 Methods of Teaching : It is imperative that the transaction of curriculum has direct impact on learning achievement. Therefore, methods of teaching should provide ample opportunity to the learners to find out, to discover and to learn. The NPE - 1986 has clearly mentioned that learner-centred approach should be

emphasized which will help the learner to get central place in the process of teaching and learning. This approach will change the role of the teacher. He/She will work as a facilitator of learning or manager of learning activities. In brief, there is a need to provide opportunities to the pupils to self-learning and acquire decision-making abilities.

3.2.3 Evaluation : Quality in elementary education necessitates high learning achievement so that dropout and failure at examination may be reduced to the minimum. The NPE - 1986 has, therefore, made a plea both for "defining minimum levels of learning at all stages of education" and establishing an appropriate machinery for the emergence of norms of comparable competence across the nation". Attainment of minimum levels of learning necessitates the need of continuous comprehensive evaluation, spelling out minimum learning outcomes (MLOs) and ensure concrete, reliable and valid evidence of their attainment.

The ultimate objective of evaluation is to bring about qualitative improvement in education. Therefore, evaluation should be constructed as a powerful instrument for improving teaching and learning. Evaluation is a devise of grading but it should be used more as an effective feedback mechanism.

CHECK YOUR PROGRESS

1. Describe the basis of developing curriculum.
2. Explain the meaning of learner-centred approach.

3. What is the meaning of continuous and comprehensive evaluation?

3.2.4 Teacher Empowerment: Teacher performance is the most crucial input for effective transaction of curriculum, generating learning environment in the school and promoting meaningful evaluation. Therefore, pre-service and inservice education is conceived as a continuous process. The POA-1986 envisaged this role to be organized by the District Institutes of Education and Training (DIETs). These institutes will also provide training to Adult Education and Non-formal Education personnel. At present around 435 DIETs have been established and approximately 300 DIETs are providing both pre-service and inservice education to the elementary school teachers. The functions of DIETs are as follows:

1. To provide pre-service and inservice education and training to elementary school teachers.
2. To develop curricular and evaluation materials relevant to the needs of the district.
3. To undertake innovations, experiments and action research to improve the quality of school curriculum and teaching-learning processes.
4. To provide academic support to the system of non-formal and adult education in the district.

Teacher education curriculum should meet the professional needs of prospective teachers. Pre-service training needs conceptual clarity of the role of teachers to prepare learners to their full potential.

Hopefully, the teacher educators working in DIETs will prepare themselves to meet the needs of inservice teachers.

3.2.5 Decentralization of Management :

The 73rd and 74th amendments of the Constitution visualise decentralization of educational administration. The Panchayats and Local Bodies are expected to look after primary education under the new dispensation. Each Panchayat will constitute a Village Education Committee (VEC) which will be responsible for the administration of education programmes at the village level. Such committees will help in the operationalization of micro-level planning and school mapping in the village through systematic house to house survey and periodic discussion with parents. The main aim of these committees will be to ensure participation of every child in primary education. The district level body will implement, supervise and monitor all educational programmes, including non-formal and adult education. From the district level, the process of decentralization percolates to the village level.

3.3 New Initiatives in Elementary Education

The need for making the education system responsive to the contemporary needs of students and the community, new approaches are needed. In the case of Universalisation of Elementary Education conventional approaches will not meet the desired objectives. Therefore, management of education, delivery system, teacher training,

non-formal education and evaluation should work together. Since the contextuality of Universalization of Elementary Education varies widely across the country, more emphasis shall be given to local area planning. Decentralized management, addressing the more difficult aspects of access, particularly access for girls and disadvantaged groups and strengthening the alternative schooling. To facilitate changes in the desired direction the District Primary Education Programme (DPEP), a mission approach has been launched. Similarly, alternative schooling has been given more impetus thereby strengthening Non-formal Education Agencies.

3.3.1 District Primary Education Programme (DPEP) : The NPE - 1986 and Programme of Action the (POA) 1992 have initiated new programmes to achieve the desired results for the Universalisation of Elementary Education (UEE). "It envisages development of district specific projects with specific activities, clearly defined responsibilities, definite time schedule and specific targets. Each district project will be prepared with the major strategy framework and will be tailored to the specific needs and possibilities in the district. That is to say, the overall goal of the project would be the reconstruction of the primary education as a whole in selected districts".

The DPEP has been approved as a centrally sponsored scheme of the government of India for the development of primary education. Ayyar (1996) has mentioned that

DPEP is based on elements, such as, area specific planning, social mobilisation and innovative use of media and communication. The basic premise of DPEP is that universalization is contextual and can be achieved only if the issues of quantity, quality and management are taken in an integrated manner. It has a project mode of policy implementation. Therefore, it becomes a process project. At present this programme is focused on educationally backward districts with female literacy below the national average. The programme would be implemented in a mission mode through registered state level autonomous societies.

The plans would be formulated and implemented with the active association of the community, NGOs, teachers and educators.

The district plans would be rigorously appraised and measures have been taken for evaluating innovations in the project and incorporating them in the rest of the system wherever it is felt desirable. Appraisal would be with reference to the criteria of equity, participative processes, feasibility, sustainability and replicability.

The availability of funds through Government of India to the state level societies has helped to operationalize the idea of DPEP.

3.3.2 Non-Formal Education (NFE) : Non-Formal Education Programme was started during the Sixth Plan (1980-85) to give new thrust to elementary education. In NPE - 1986 it has been suggested that the non-formal programme will cater to the

dropouts and those children from habitations without school, working children and girls who cannot attend schools for the whole day.

NFE has been visualized as a child-centred and environment-oriented system to meet the diverse educational needs of the comparatively deprived socio-economic areas.

NFE is being implemented on a project basis. It seeks organizational flexibility, relevance of curriculum, diversity in learning activities and decentralised management. New measures like linking the NFE to formal schools and microplanning exercises, effective decentralization of management, involvement of the community in the setting up and supervision of the centres and strengthening their training components through net-working.

It will relate pupil evaluation to the MLLs. The pupils from NFE centres may join the mainstream of formal education. Some linkages shall be established between the non-formal courses with those of open schools. Pupil evaluation in NFE will be learner based and related to MLL. Two innovative non-formal education projects are : the Shiksha Karmi Project and the project entitled Promoting Primary and Elementary Education (PPEE) which is an action research project conducted by the Indian Institute of Education, Pune.

There is a move to start voluntary schools to cater to the needs of neglected hilly, tribal and difficult areas where there is no provision of schooling. Such schools will meet the needs of universal primary education. Such schemes may serve as an alternative to schooling.

CHECK YOUR PROGRESS

1. Write two highlights of the DPEP.
2. Non-formal education is a much desired programme in India. Justify this statement.
4. Let Us Sum Up
 1. Universalization of elementary education is the constitutional need in India.
 2. In India, there is regional diversity which necessitates innovative initiatives to meet the Constitutional directive for the UEE.
 3. In the last five decades many efforts have been made to achieve targets of UEE.
 4. At present there is 52% literacy in India.
 5. Quality in education refers to the degree of excellence of desired learning at the mastery level.
 6. There are different indicators of quality in education, such as:
 - ☐ Curriculum transaction
 - ☐ Teaching-learning process
 - ☐ Infrastructure
 - ☐ Evaluation
 - ☐ Learning environment
 - ☐ Use of multimedia
 - ☐ Educational Management
 7. Curriculum helps in building quality and equality.
 8. Proper selection of teaching methods facilitate learning which produces learning achievement.
 9. Learner-centred approach promotes self-learning.
 10. In learner-centred approach teacher functions as a facilitator of learning.
 11. DIETs have been established for qualitative improvement in in-service training of teachers.

12. The nation has initiated decentralised education management to give Constitutional powers to Panchayats and local educational bodies.

13. To achieve literacy and UPE, the DPEP has been started in many states. The DPEP has a focus on area based approach which seeks participation of the community, and seeks cent percent access, retention and high levels of learning achievement.

14. It has been realised that the UEE needs holistic approach so that formal schools, non-formal educa-

tional agencies and voluntary schools contribute to achieve the desired goals.

Review Exercises

1. UEE has remained elusive in the last five decades. Discuss.
2. Define quality in education.
3. List five indicators of quality in education.
4. Discuss in brief the role of curriculum, DIETs and evaluation in promoting quality in education.
5. Discuss the role and significance of DPEP.
6. Explain the significance of Non-formal education.

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Teacher Education

Problems, Issues and Emerging Trends

G.L. Arora Pranati Panda

1. Overview

Since teachers constitute a very important part of any educational system, all efforts for the improvement of education should focus on them. This is the reason that teacher education is considered as an integral part of educational system and improvement in the quality teacher's education is one of its major objectives. Teacher education is defined in several ways in professional literature, but the definition and meaning given in the NCTE (1993) Act is worth mentioning. Teacher education means programme of education, research or training of persons for equipping them to teach at pre-primary, primary, secondary, senior secondary stage in schools and non-formal education, adult-education and correspondence education through distance mode.

The number of teachers and teacher education institutions in the country has grown manifold during the last few decades. The existing system of teacher education which is

less co-ordinated and diverse in nature covers around 2,000 teacher education institutions, 200 university departments and around 25,000 teacher educators belonging to academic and vocational areas working in universities, colleges of education, teacher training institutes and research and training institutions at the district, state and national levels.

The teacher preparation programmes have not changed much during the recent past and, are therefore, under severe criticism for being static, unresponsive to the emerging challenges of the present time. Contemporary teacher education system has not been able to keep pace with the changes taking place in other spheres of our national life.

This module discusses various facets of the system of the teacher education and issues and problems related to it. Besides, it also highlights some of the strategies for qualitative improvement in teacher education. The module also discusses emerging trends in teacher

education keeping in view the changes taking place in the educational scenario.

2. Objectives

Upon reading this module, you will be able to:

- Understand various problems and issues of teacher education;
- Appreciate the various strategies and innovations undertaken during the recent past for qualitative improvement of teacher education; and
- Reflect upon the emerging trends in teacher education.

3. Problems of Teacher Education

There is a growing feeling that teacher education is not effective in turning out efficient teacher and this concern is adequately reflected in the National Policy on Education (1986) and Programme of Action (1992). It called for a complete overhaul of the system of teacher education. The challenges before teacher education system which relate to its 'structure' 'design' and 'curriculum', require a detailed and critical discussion to establish an effective teacher education system for our country.

We all are aware that teacher education in India, both pre-service and inservice is beset with numerous problems. For instance, the pre-service teacher education, by and large, is theoretical in nature and the practice is not based on theory. The linkages between theory and practice are rather weak and teacher educators are not able to

demonstrate the methodologies of teaching which they recommend to their trainees.

The question of the duration of the teacher education has engaged the attention of the educationist right from the time when the system started evolving. The discussion on the programme duration has centred around the place and the relative importance of the content and methodology courses. In the context of the secondary teacher education, the controversy has narrowed down to the continuation of the existing model of one year training after graduation or its replacement by a four year integrated programme after higher secondary or offering both the programmes by providing flexibility to the students to opt for teaching profession after passing higher secondary examination or after completing graduation.

In the present system of teacher education, the varying level of entry qualification is required to teach at lower and higher stages of school education. A mere pass in high school or higher secondary examination is considered to be a sufficient qualification for a primary school teacher while a secondary school teacher must have general education of at least graduation level. However, the differences between the levels of entry qualification for the level of teacher preparation programme is now questioned in the light of the experiences of the developed countries where the academic and professional qualifications are almost identical. In countries like the United States, Canada, Japan and Australia the

qualifications prescribed for admission to a primary or secondary teacher education programme is higher secondary pass and the duration in both the cases is the same i.e. four years. At the primary /elementary stage, dealing with young children and for making them understand the concepts included in the curriculum, people with sound academic base and cognitive maturity are required. However, teacher with higher academic qualification are likely to feel frustrated if they are granted the salary scales of primary school teachers rather than the scale to which they may be entitled on the strength of their academic qualifications.

The question relating to the place of the content of school subjects in the teacher education curriculum has proved to be contentious. In the one year secondary teacher education programme only 'methodology' of teaching is taught as the trainees have passed at least degree level examination in the subjects concerned. On the other hand, it is pointed out that mere possession of a degree does not ensure mastery. Besides 'methods' have to be taught and practised in relation to the subject matter. In the case of elementary teacher education, the controversy relating to content versus methodology has been sharper in view of the lower general education qualification of the prospective teachers. One of the arguments for increasing the duration of the programme from one to two years has been the need to accommodate content courses in the teacher education curriculum.

Further, there has been a controversy with regard to the level or standard of content which should form part of teacher education curriculum. Should it be of the level of grades which the trainees shall be required to teach after completion of the training or it should be beyond the general level of the trainees? It is assumed that the study of school subject along with their methodology of teaching, shall help the prospective teachers to gain insight essential for teaching these subjects to young children.

It has been observed that teacher education curriculum, by and large, is not based on the systematically conducted analysis of the tasks a teacher has to perform. A major portion of the curriculum is based on the judgements of experts regarding what a teacher should know and practise. In school, an average teacher is called upon to maintain records, handle various types of equipments, interact with parents, mobilise community resources, undertake correction work, remedial teaching, organize co-curricular activities, evaluate pupil's achievement and instructional materials. The present day curriculum lays more emphasis on theoretical aspects of education and equip the trainees inadequately to undertake the aforesaid tasks.

It is incumbent on the framers of the teacher education curriculum to take due note of the demands of the school curriculum. A teacher education curriculum is effective to the extent it prepares the prospective teacher to negotiate the school

curriculum with confidence. Since a primary school teacher is expected to handle all curricular areas included in the curriculum—physical education, art and work experience activities have been made integral part of elementary education curriculum. However, at the secondary stage, the linkages between teacher education curriculum and school curriculum are rather inadequate. In most of the universities a trainee has to offer two school subjects as practice teaching subjects but he/she might not have studied both the subjects at the graduation level. This implies that some trainees are called upon to teach a subject for which they do not possess adequate background or competence. In the absence of synergic linkages among school curriculum, under graduation curriculum and teacher education curriculum, teacher preparation remains inadequate. Since the higher education system is not geared to the demands of the school system or the teacher education system, it can not be expected to change itself to meet the requirements of school curriculum.

During the past few years, a number of universities have started offering teacher education programmes through distance mode. Since the distance strategies in such courses have not gone beyond correspondence lessons and the provision of practice teaching is almost non-existent, so quality is something which can hardly be expected in such programmes. Besides, most regular teacher training institutions lack

infrastructural facilities and suitably qualified manpower. Therefore, these sub-standard institutions impart nothing but sub-standard education and training. The NCTE has laid down certain guidelines for B.Ed. through distance education mode which aim at qualitative improvement of this programme.

Teacher education institutions do not have enough scope for preparing teachers for special fields such as craft, arts, physical education, music, teachers for disadvantaged group and also teaching in variety of contexts like multigrade, integrated set up and handling large size classes etc.

The situation relating to availability of trained manpower for schools is indeed paradoxical. On the one hand trained teachers remain unemployed for years together and on the other there is shortage of trained teachers in schools specially in tribal and rural areas. There is a dilemma of over-supply of trained teachers in urban areas on the one hand, and on the other hand there is a short supply of teachers in remote areas and in certain curriculum areas like science and mathematics.

The professional preparation of teacher educators is another concern which deserves serious consideration. In teacher training institutions most of the faculty members hold post-graduate degree in some discipline and a degree in education or teaching. They are not specially trained for training prospective teachers as there is no course available in teacher training methodolo-

gies. During the last few years a large number of persons have joined teacher education institutions without having ever taught in schools. This has exacerbated theoretical orientation of teacher education which has very often been pointed out and criticised by almost every Commission or Committee on education. In fact, there is hardly any course available for the preparation of elementary teacher educators for the DIETs. To professionalise teacher education it would be necessary in the years to come to develop professional preparation programmes for teacher educators.

Inservice education, being an ad hoc and sporadic activity, in many parts of the country, has failed to make any visible impact on the quality of school education. Transaction modalities in these programmes are in the form of lectures delivered by different experts without training materials and suitable audio-video support. A major problem of inservice education is the lack of motivation on the part of the majority of teachers to undergo a training programme. Besides this, all the teachers are not able to participate in such programmes even once in a period of 5-6 years.

One of the major drawbacks suffered by the teacher education system is the lack of inflow and utilization of researches and innovations in the system. Teachers and schools are not seriously involved in the conduct of researches and innovations.

There are many more problems and issues like mushrooming growth of teacher education institutions,

infrastructure, physical facilities, admission procedure, library, internship, methodology devoid of activity and MLL, faulty evaluation techniques, negligence of remedial teaching and ineffective inservice teacher education programme which need to be addressed to strengthen our teacher education system.

Activity List the major issues and problems related to teacher education in your state.

4. Strategies for Qualitative Improvement in Teacher Education

In the context of major issues in teacher education in India discussed above, it is essential to probe what strategies and innovations have already been attempted to bring qualitative changes in our system of teacher education. This will provide enough scope for framing some well thought out strategies for future.

A major initiative launched in pursuance of the National Policy on Education - 1986/1992 was to establish the District Institutes of Education and Training (DIETs) to provide pre-service and inservice training to elementary school teachers, AE and NFE personnel. In addition upgradation of Secondary Teacher Education Institutions into Colleges of Teacher Education (CTEs), establishment of Institutes of Advanced Studies in Education (IASEs), strengthening of SCERTs and University Departments of Education had the basic objective of providing training and resource support to

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elementary and secondary education at the grass root level. Central assistance provided for the above mentioned institutions was meant for the construction of buildings, procurement of books and equipment and additional expenditure on staff salaries and training programmes. The establishment of the National Council for Teacher Education (NCTE), as a statutory body, is another significant development. As part of its responsibility, the NCTE has developed norms for teacher education programmes at secondary, elementary and pre-primary stages. These norms are milestones to ensure qualitative improvement in teacher education. Various aspects on which qualitative improvement has already started taking shape are emphasis on ensuring minimum number of training days, insistence on minimum qualifications for teacher educators, training in physical education, art and music and quality control measures for distance education programmes.

As a major breakthrough, the Programme of Mass Orientation of School Teachers (PMOST) was launched as a centrally sponsored scheme in all the states and union territories during 1986-90. About 1.8 lakhs Primary and Secondary Teachers were covered under this programme. During 1991-93, teachers were oriented in the effective use of material and equipment provided to each primary school under the OB scheme. In 1993-94, Special Orientation Programme for Primary Teachers was launched to develop competencies in MLL and

use of OB materials and child-centred approach to teaching and learning. The NCERT has also conducted experiments using Interactive video technology (Teleconferencing) to train primary teachers of various states.

Another pioneering effort for qualitative improvement of teacher education was 'Teacher Education Curriculum Framework' brought out by NCTE in 1978. Later, in 1988 an expert group of NCTE deliberated upon various pertinent issues of teacher education curriculum. The NCTE is currently engaged in bringing out a new curriculum framework for various teacher education programmes.

Some innovations in teacher education have been carried out during post - Independence period to bring qualitative improvement in our system. A four year programme leading to B.Ed. degree was started by Kurukshetra University during late nineteen fifties with a view to attract bright students to teaching profession and to ensure integration of content and methodology. The curriculum was a combination of the curriculum of undergraduate courses in science and humanities and that of the one-year B.Ed programme. The experiment was ultimately discontinued as its institutionalization, in place of the traditional one year programme, was found to be difficult.

The four year integrate programme was also introduced during nineteen sixties in the four Regional Institutes of Education of the NCERT at Ajmer, Bhopal,

Bhubaneshwar and Mysore. During the thirty years of its existence, the scheme of studies has been modified several times. Unfortunately, the experiment having the potential of professionalising the teaching profession, has not crossed the confines of the Regional Institutes of Education in spite of unambiguous support from several Commissions and Committees. The Yash Pal Committee (1993) had also recommended introduction of specialized B.Ed. or four-year integrated teacher education programme. The University of Delhi has recently introduced a new four year programme titled B.El. Ed. (Bachelor of Elementary Education) in five colleges in order to prepare quality teachers for the elementary stage of education.

The need for having suitable teacher education programme for senior secondary stage has been felt since the introduction of 10+2+3 pattern of education and with the transfer of this stage of education to the school sector. The question of prescribing teacher education qualification as an essential criteria for senior secondary teachers has assumed importance. Till recently, the NCERT had been running a two-year M.Sc. Ed. programme in mathematics, physics, chemistry and life science in its Regional Institutes of Education. The programme had been developed on the premise that pedagogy for a subject should form an integral part of its content.

In case of children with disabilities, the focus has shifted from the concept of exclusive

schooling to inclusive schooling. This has thrown up the need for building a cadre of teachers who could handle disabled children in integrated settings. A number of universities have responded to this need of the school system by introducing B.Ed. (special education).

Activity Conduct a small investigation to compare the effectiveness of primary school teachers with different levels of academic and professional qualifications.

5. Emerging Trends in Teacher Education

Let us now discuss the emerging trends in teacher education like privatisation, commercialization, liberalization, globalization, expanding distance education and induction of new technologies etc.

In the context of teacher education the most important change that has occurred during the past few years is in the perception and attitude of people. The question whether teachers are born or made is no longer a subject of debate. Realising the importance of pre-service teacher training, the education department of almost all states have prescribed diploma or degree in education as an essential qualification for the recruitment of teachers. The successive five years plans highlighted the need to clear backlog of untrained teachers by offering teacher training programmes through distance mode which have already been launched by various universities.

The most popular teacher education programme in the country is the B.Ed. programme. The teacher education system in the country is generally equated with the prevasive and multipurpose B.Ed. programme. The same programme is considered appropriate for the preparation of teachers of different stages of school education, school supervisors, administrators and teacher educators. Since the teachers, supervisors, administrators and teacher educators have to undertake different tasks, the same curriculum will not be appropriate for their preparation. This calls for the introduction of specialised courses developed on the basis of task analysis of various jobs. To prepare better qualified teachers for the early childhood and elementary sector of education, Jamia Millia Islamia, Punjab and Delhi University have introduced B.Ed. (nursery) and B.Ed. (elementary education) programmes while some other universities have introduced master degree programmes in educational planning and administration, computer application in education, guidance and counselling etc. To prepare teacher educators, administrators and supervisors for elementary sectors of education, the Regional Institutes of Education of the NCERT and Jamia Millia Islamia have introduced M.Ed. (elementary education). It would also be desirable to introduce these specialisations in the general B.Ed. programme so as to provide rudimentary knowledge of all these fields to all the

prospective teachers which may motivate them to diversify to a field of their choice at a later stage.

The number of candidates holding university degree and desirous of coming to teaching profession has increased tremendously in many parts of the country. However, with the ever increasing amount of knowledge and information on the one hand and ever changing school curriculum on the other will require teachers with higher level of competencies. The present trend envisages a positive direction as most of the entrants for elementary and secondary teacher education programmes are graduates and post graduates respectively. This implies that the basic qualification for elementary school teachers shall have to be raised to the graduation level. Likewise, the basic qualification for secondary school teachers shall have to be raised from the present graduation level to post-graduation level.

There is a greater realization that to bring professionalisation in teacher education an integrated teacher education programme may be introduced both at the elementary and secondary levels of teacher preparation. The relevance of teacher education curriculum to the demands of school education can be ensured by offering integrated programmes of teacher education of a longer duration which is the existing pattern in many developed countries. The

introduction of B.El.Ed. (Bachelor of Elementary Education) in five colleges affiliated to the University of Delhi may be considered as a beginning in this direction.

Revolution in the field of educational technology brought about unbelievable change in the teaching and training methodologies. The experiment entitled "Classroom 2000+" conducted by the NCERT opened up the possibility of using teleconferencing as a mode of teaching learners who are separated geographically from the resource persons. The training of teachers through teleconferencing using one-way video and two-way audio technology are undoubtedly precursors of teacher training through distance mode to tackle the problem of numbers and to minimise the transmission loss. The availability of computer has made it possible for the school system to exploit the potential of using computer as an aid to teaching. Many teacher training institutions have started preparing teachers in this direction.

Diversity in teacher education programmes is emerging. It is being realised that boundaries of teacher training can go beyond the preparation of teachers for merely elementary and secondary schools. Teachers for work education, teachers for higher education, teachers for non-formal institutions, teachers for adult education and teachers working in other professional sectors of education also belong to the broad domain of teaching profession and therefore,

there is need to mount specialized teacher preparation programmes for them.

It is felt that in the present context it would be essential to establish a mechanism for dissemination of research outcomes to the teachers and teacher education institutions. Presently, teacher educators in large number of elementary teacher training institutions (DIETs) are being encouraged to conduct researches and studies specific to their locale. Simultaneously, teachers are being encouraged to undertake action research, developmental projects, studies and innovations.

Activity Organize a panel discussion on the emerging trends in teacher education.

6. Let Us Sum Up

At this juncture in the history of India, the critical factors and forces operating in the society are characterized by scientific and technological changes on the one hand and globalization and liberalization on the other. Like school education, our teacher education system has to respond suitably to all these changes. The existing model of teacher education has outlived its importance of producing effective teachers and has failed to ensure responsive modifications in the desired direction. The development of a teacher as a reflective practitioner shall have to be accepted as the goal of any teacher education programme in future. In fact, as a

pre-requisite of quality improvement of teacher education, it is essential to provide opportunities to teachers and teacher educators to acquaint themselves with the changes that have occurred due to scientific and technological development.

Review Exercises

1. What are the major issues and problems related to teacher education?
2. What strategies would you like to suggest for qualitative improvement of teacher education in your state?
3. Critically analyse the position of supply and demand of teachers at primary stage in your district.
4. Do you feel that the trends that have emerged recently are in the desired direction?
5. List five major weaknesses of the elementary teacher education programme in your state.
6. What are your suggestions to professionalize teacher preparation programmes at par with other professions like medicine, engineering, management, etc.
7. Think of some consequences of upgrading the entry qualification for admission to the elementary teacher education programme.

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Planning of Inservice Education Programmes

S.K. Bhatla

1. Overview

The National Policy on Education (1986, 1992) states that a teacher plays a pivotal role for implementation of educational programmes. Consequently, there is a need of inservice education for him to keep him up to date on changing educational goals and priorities, revision of school curricula, and new strategies to improve the teaching-learning system.

Planning of inservice education necessitates identification/ assessment of training needs, preparation of training design, development of training materials, preparation of self-learning instructional material and its field testing. It will be meaningful to internalize the mechanism and processes of planning of inservice education in order to organize it effectively.

2. Objectives

After studying this module, you will be able to:

- ☐ develop procedures for identifying the training needs of the teachers;

- ☐ assess the training needs of the teachers;
- ☐ develop curriculum design for a inservice training programme;
- ☐ understand modalities for the conduct of an inservice training programme;
- ☐ enumerate the characteristics of good self-learning materials;
- ☐ suggest strategies for developing self-learning study materials; and
- ☐ assess the validity of the self-learning materials.

3. Determining Training Needs of the Teachers

It is necessary that a teacher should be equipped with the innovations pertaining to his/her subject area and gaps in the knowledge of content and pedagogy, if any, be removed. How to assess the difficulties that are faced by different teachers during the teaching-learning processes is an important question. This section focuses on the procedures for identifying the training needs of the teachers.

3.1 Procedure for Identification of Training Needs

The following procedures may be followed for identifying the training needs of teachers:

1. *Gathering Information through Personal Visits* : Teacher-educators may personally visit schools, meet the teachers individually and collectively. Teachers' difficulties may be noted down. List of common and individual difficulties may be prepared. For removing individual difficulties, experts may be sent to schools or the teachers may be invited at the SCERT or the venue of the inservice teacher education programme and their difficulties may be discussed and removed there. For removing various common difficulties the teachers may be invited at a suitable venue for discussion with the experts.

2. *Collecting Information through Questionnaires/Tests* : A questionnaire may be developed, seeking information from the teachers about the difficulties that they face during the teaching-learning process. They may be asked to pin-point their difficulties pertaining to content and pedagogy. Their difficulties may be suitably classified; for example, difficulties of content, pedagogy, etc. Convenient dates and venue may be fixed in order to organize an inservice programme. School principals may be requested to depute these teachers and resource persons may be invited to discuss the topics assigned to them. Teacher-made

subject matter tests can be developed and administered on the teachers to know about their deficiencies in content.

3. *Collecting Information from Principals and Education Officers* : Instead of seeking information directly from teachers, training coordinators can visit school principals and education officers or mail the questionnaires to them to know the training needs of the teachers. On the basis of their observations on teachers' lessons and the notebooks checked by them, the principals and education officers will be in a position to diagnose their weaknesses. Sometimes they offer useful tips about teachers' training needs.

Activities

1. Visit a neighbouring school and identify the training needs of the teachers of the school.
2. Identify the training needs of the teachers of a school through their principal and the supervisory staff.

3.2 Developing Curriculum Design for a Training Programme

A curriculum design is a detailed plan of any programme to be organized for accomplishing the laid down objectives. The implication for developing curriculum design for inservice teachers is to formulate a plan for solving teachers' problems. A good curriculum design should include the following:

1. *Training Requirements of the Teachers* : A list of the topics to be

covered in the inservice programme is prepared. These topics may pertain to content areas, pedagogical areas or some current significant educational areas. It will be better if sub-topics to be discussed are also given along with the main topics.

2. *Details about Resource Persons:* A list of topic-wise resource persons is prepared. It should be a comprehensive list, containing the names of resource persons, their specialization, favourite topics, residential and official addresses, contact phone numbers etc.
3. *Reference Books and Journals :* A curriculum design should incorporate the names of reference books and journals for each topic. An attempt should be made to make such books and journals available at the venue of the inservice programme.
4. *Places to be Visited :* The names of some relevant places viz. laboratories for science programmes, museums and monuments for history programmes and sports for conducting environmental studies should find a place in the curriculum design. The important features of such places should be mentioned against each one.
5. *Teaching Aids :* The details of teaching aids available in the institute and of those that can be procured from other sources should be given in the curriculum design. The training institute should be equipped with all relevant teaching aids.

6. *Transaction Modalities :* A good curriculum design should include details about various topics, lectures, discussion, brainstorming activity, simulation, small group work etc, may be used depending upon the nature of the topic and the objective(s) related to it. The variety in terms of assignments and activities should also be indicated.
7. *Assessment Techniques :* A good curriculum design should provide for how various techniques may be used for eliciting the needed feedback and monitoring the learning of the participants through formative and summative evaluation techniques. Proper use of these techniques can ensure greater attainment of the programme objectives.
8. *Time Table :* A tentative time-table should also be an end-product of the curriculum design. Minor changes may be allowed in it but the logic of sequencing content topics should not be compromised as far as possible.

3.3 *Modalities for the Conduct of the Programme*

Once the above steps of the curriculum design have been completed, the task of conducting the programme becomes easy. The objectives to be accomplished through the inservice programme should be precisely written. The objectives stated in behavioural terms become the basis of the conduct of the programme and they also provide the tools of evaluation for assessing the level of

success of the programme. This has already been hinted at under 3.2 (vii) above. Other aspects for effective conduct of the programme include:

- ❑ Development of programme schedule
- ❑ Decision regarding the venue of the programme
- ❑ Allocation of work to administrative personnel
- ❑ Contacting resource persons and fixing up their schedule
- ❑ Inviting the participants
- ❑ Ensuring proper attendance and adherence to programme schedule, and
- ❑ Making necessary arrangements for infrastructure facilities, refreshment etc.

A copy of the course design should be enclosed with the invitation letter to each resource person so that she/he knows what is expected of her/him in terms of content to be covered, transaction modalities to be used, activities to be arranged and assignments to be set. The course design would further inform the resource persons about the techniques expected to be used for involving participants, monitoring the nature and quality of their participation and the assessment techniques to be used.

3.4 Post-Conduct Activities

After completing the programme, the following steps should be undertaken :

1. **Feedback** : Every inservice programme is organized to accomplish certain objectives. The organisers would be interested in assessing the extent to which the objectives

have been attained. Such assessment is possible through a feedback proforma, developed for evaluation of the programme. Through such a proforma, the participants are asked to judge the extent of the usefulness of the programme. They rate the contribution of each resource person. The organisers, on the basis of such feedback can improve their future programmes.

2. **Follow-up** : The organisers should have the freedom to observe how the participants make use of the knowledge gained during the programme. They may visit the schools and observe the classes to find out the impact of the programme. Questionnaires may also be sent to the participants to know how the knowledge imparted in the programme is being communicated to the students in actual teaching situations.

A schematic diagram of a curriculum design, conduct and evaluation of an inservice programme is given below:

Curriculum Design, Conduct and Evaluation Phase of an Inservice Programme

I. Pre-Conduct Phase

- ❑ Listing the topics to be included in the programme
- ❑ Developing inventory of resource persons
- ❑ Procuring reference books and journals
- ❑ Preparing tentative list of places to be visited
- ❑ Collecting the required teaching-aids
- ❑ Developing the curriculum design for the programme

II. Conduct Phase

- ☐ Formulating the objectives of the inservice programme
- ☐ Finalisation of the time table
- ☐ Modalities of the programme

III. Post-Conduct Phase

- ☐ Feedback
- ☐ Follow-up

Activity Visit a primary school, ascertain the training requirements of the teachers of the school, and complete the need-based 'Curriculum Designing Phase' for organising an inservice programme for them.

4. Development of Self-Learning Materials (SLMs)

Deliberations during the inservice programme bring about behavioural changes in the participants. To strengthen and enhance such changes, it is desirable that the participants be provided with suitable study material. They can go through the study material and reflect over them. Since they would be going through the study-materials independently, self-learning material should prove more suitable. Self-learning material enable the readers to study independently without the physical presence of the teacher(s). Self-learning material should be presented in such a way that the learners learn the subject-matter more effectively than when they learn it through traditional type of textbooks, SLMs consist of explicitly-stated behavioural objectives, explanation of key terms,

study units, learning and evaluation exercises, summary points, unit-end evaluation exercises and lists of readings.

4.1 Characteristics of Self-Learning Material

Self-learning materials (SLMs) should be developed in such a way that the learner can learn the content independently without the physical presence of the teacher. Good SLMs have the following features:

- I. **Explicitly Stated Objectives** : The objectives of the topic to be learnt should be clearly stated in behavioural terms. These objectives guide the learner about the purpose of learning a particular unit and what he/she has to learn in the unit.
- II. **Sequencing the Content** : The sequence of content presentation should be based on psychological principles like proceeding from simple to complex, known to unknown, etc. Such a presentation enhances and maintains the learner's interest and the learner can continue to study and use the SLMs again and again.
- III. **Teaching Units** : The content is presented in small units, allowing the learner to guess what he/she has studied in it. If a learner studies a small unit and gets an opportunity to review what he/she has learnt, he/she may be able to learn more effectively and such a learning lasts longer.
- IV. **Feedback** : A section/sub-section based feedback helps learner to

confirm whether or not his learning is correct. If learning is correct, he/she may proceed further to study the subsequent material, otherwise he/she may be held up at the same unit for more relatively longer time.

V. *Reinforcement* : This is an intrinsic or extrinsic reward that is accorded to a learner when he gives correct response. B.F. Skinner says that positive reinforcement strengthens learning. Therefore, self-learning materials should be developed in such a way that the learner is able to reinforce his/her learning.

VI. *Guidelines* : Appropriate guidelines should be inserted wherever required in self-learning materials. These guidelines may be about how to study the self-learning material, how to pronounce specific technical terms, how to do various activities, etc.

VII. *Entry Level Knowledge* : In order to have fuller comprehension of a lesson, the learner is expected to have some basic knowledge that facilitates the learning of the unit(s) to be studied. Learners should ensure that they have complete knowledge of the required basic content before they work on SLMs.

4.2 Strategies for Developing Self-Learning Materials

The following two strategies are generally employed by those who are engaged in developing self-learning material:

I. *Unit-wise Intext Strategy* : Under this strategy, the content is

sequenced and divided into self-contained units. Each unit is followed by intext-exercises. Readers go through each unit and do the exercises given in the text and also at the end of each unit. A subsequent unit is attempted only after the preceding unit has been mastered. Other features, e.g. stating instructional objectives at the beginning of the lesson, entry level requirements, intext and unit-end exercises, etc. may also be included.

II. *Frame-wise Intext Strategy* : Under this strategy, all the features as mentioned in the first strategy remain the same, the only difference is that of the size of learning step in terms of content. Each unit is further divided into smaller sub-units. Each step of the sub-unit is called a frame or an exercise. Each learning frame contains bits of information followed by a question. A criterion frame on the other hand contains only a question. A teaching point terminates at the criterion frame. The criterion frame, usually, comes after every four to six frames, but there is no hard and fast rule about the number of frames that precede a criterion frame. The reader is allowed to proceed to the next frame only after he/she has mastered the preceding frame.

Self instructional materials based in this strategy are known as Programmed Learning Materials (PLMs).

4.3 Validity of Self-Learning Materials

Validity of self-learning materials includes the checking of the content

for correctness by one or more experts in the subject matter and checking of the treatment given to the content by the author of SLMs. These experts, besides certifying the genuineness of the content, standardise the various parts of the self-learning materials, like instructional objectives, size of each unit or frame, intext questions, other directions etc.

After the experts have suggested modifications and finally their approval, self-study materials may be further improved by small group and field try-outs. Validity of the self-learning materials may also be ascertained through statistical techniques. If the difference between the two means, calculated on the basis of the achievement by the subjects of the field study at pre-test and post-test stages, is significant, the study material may be considered valid.

Activity Develop self-learning material for teaching a lesson in any school subject to students of 3rd and 4th standards incorporating the steps suggested in this module.

5. Let Us Sum Up

1. Teachers' training needs may be identified through personal visits or through questionnaire seeking necessary information from teachers, principals and education officers.
2. Various approaches to inservice training are: seminars, workshops,

conferences, orientation programmes, etc.

3. Curriculum design is a detailed plan of an inservice programme to be organised for accomplishing the laid down objectives.
4. Characteristics of self-learning material are explicitly stated objectives, sequencing the content, small teaching units, entry level knowledge, feedback, reinforcement and guidelines for use of the readers.
5. Strategies for developing self-learning materials are : (a) Unit-wise intext strategy and (b) Framewise intext strategy.
6. Validity of self-learning material is concerned with the genuineness of the content and pedagogies used in the self-learning material.
7. The validity of self-learning material can be determined by experts in content and pedagogy. Statistical techniques also may be used in assessing the validity of self-learning material.

Review Exercises

1. Mention three procedures that can be used for identifying training needs of teachers.
2. Describe how you will ensure proper conduct of an inservice education programme.
3. Describe the desirable characteristics of self-learning materials.
4. Describe the importance of validating self-learning material.

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Organisation of Inservice Education Programmes

S.K. Bhatla

1. Overview

As an instrument to update professional competence among teachers, inservice education has to be treated as continuation of their pre-service education. Continuing education of teachers provides substantial opportunities to teachers to enrich their content knowledge, to enhance their teaching competencies and to instil professionalism among them.

Inservice education of teachers can be organised through various modes, such as, face-to-face interaction, distance mode and through direct interaction and distance mode together.

Inservice education of teachers has to be based on their needs related to educational policies, educational innovations, content enrichment and professional competence. Consequently, a suitable approach may be selected to achieve the desired outcomes. The approach selected may include organisation of workshop, seminar, conference etc.

2. Objectives

After studying this module, you will be able to:

- ☐ Describe the modes of imparting inservice education;
- ☐ Explain the different approaches to teachers' inservice training;
- ☐ Decide an approach for the programme to be organised according to the training needs of the teachers ; and
- ☐ Explain the process of using different approaches to training.

3. Modes of Organising Inservice Education Programmes

Inservice education programmes may be organised through three modes, viz. the face to face interaction mode, the distance mode and the distance-cum-contact mode. These modes have been discussed in the following sub-sections.

3.1 Face-to-Face Interaction Mode

This is the most commonly used mode for organising inservice education. Under this mode, the resource persons and the participants sit face-to-face

and the communication takes place in a manner similar to that of classroom situation.

A very strong advantage of this mode is that two-way (and even multi-way) communication is possible through it and the participants get an opportunity to clear their doubts on the spot. This mode provides opportunities of social interaction between resource persons and participants. The participants, not only learn the content, they observe and appreciate the emotions and feelings expressed during the course of deliberations.

3.2 *Distance Mode*

Howsoever effective the inservice education programmes may be, the fact remains that the students suffer a loss when teachers attend these programmes during working days. Besides, it is inconvenient to go to a far off place to attend the programme. Such limitations may be overcome if inservice education programmes are organised through the distance mode. Distance mode may be used through correspondence, TV and Radio. However, sound infrastructural facilities are required for effective organisation of inservice education programmes, through this mode.

If inservice education programmes are to be organised through correspondence, the organisers should develop suitable learning materials in modular form based on the content to be communicated. Such modules should be developed on the basis of principles of self-learning. Self-

learning modules focus on explicitly stated instructional objectives, entry-level competencies, small learning units followed by intext questions, suitable guidelines at crucial stages, terminal exercises, feedback, reinforcement. etc. Similarly, TV and radio lessons should be based on suitable scripts, convenient timings and meaningful instructions for the users and an effective follow-up.

3.3 *Distance-cum-Contact Mode*

This mode has the features of the face-to-face interaction mode and distance mode, viz., face-to-face contact, correspondence, TV and radio based lessons. This mode is commonly used with many correspondence courses. Besides communicating some parts of the content through the distance mode, the organisers establish direct contact with the students where they have face-to-face interaction with the experts. Such contact programmes enable the organisers to discuss the difficulties of the clients and present such demonstrations which may be almost impossible through the distance mode.

Some distance education agencies e.g. Indira Gandhi National Open University have set-up permanent resource centres to enable the learners to have an easy access to the experts and reference material available there. Thus, the distance-cum-contact mode enhances the effectiveness of inservice education. This may not be possible through the use of the distance mode only or the face-to-face interaction mode only.

Activity Make a list of the activities that you would like to include in a contact programme which is to be supplemented with an inservice correspondence programme for primary teachers of your district.

4. Techniques of Organising Inservice Education

The following are the important techniques of organising different inservice education programmes:

1. Seminar
2. Workshop
3. Orientation Programme
4. Refresher Course
5. Symposium
6. Panel Discussion
7. Conference

Let us study each of these techniques of inservice education programmes and examine how these programmes may be organised.

4.1 Seminar: The Dictionary of Education defines a seminar as a "small group discussion session, particularly one following the presentation of an essay or other work or a lead-lecture".

Thus, an expert presents a paper or gives a talk on a topic and the participants discuss it thoroughly. A seminar leads to better understanding of the subject and increases confidence of the participants to talk and interact and seek clarifications for their further studies.

4.2 Workshop: An educational workshop in an inservice education programme provides an opportunity

for some developmental work. Expert guidance and joint discussions enable the participants to develop the desired material. A workshop may be organised to formulate instructional objectives and develop instructional materials, teaching aids, evaluative exercises, etc. Thus, a workshop enables the participants to attain theoretical knowledge and apply it to practical situations.

4.3 Orientation Programme: An orientation programme is designed to introduce the participants to a subject or institution. It familiarises a person with different aspects of school environment, e.g. rules, curricula, convictions, etc. to facilitate quick and effective adaptation.

An orientation programme may be organised to clarify teachers' doubts regarding certain topics pertaining to the content and pedagogical issues. It may also be organised to familiarise the participants with recent innovations that have taken place in specific areas.

4.4 Refresher Course: Such a course is organised in order to have a fresh look at the existing knowledge. The participants listen to the experts' views on the topics about which they already have some knowledge. After a brain storming session, they gain clarity on the topic under discussion. Refresher programmes are quite helpful in enriching teachers' knowledge in their respective subjects as well as in pedagogy. Many a time, such refresher courses prove effective in removing mis-concepts from the minds of the participants.

4.5 Symposium : The Advanced Learners' Dictionary of Current English defines a symposium as "a collection of the opinions of several people on the same subject". In a symposium, experts give their views on a subject. The audience listen to them. They may put questions to the expert resource persons after they (the experts) have presented their views on the subject.

4.6 Panel Discussion : Panel discussion is a small group discussion on a topic. The members of the panel are experts in a specific area or discipline. They, usually speak on a selected topic under the direction of a chairman or a coordinator. The chairman directs the discussion and ensures equitable participation by all members of the panel. He/she intervenes whenever required to keep the discussion on the right track. He/she may invite questions from the audience and request one of the panelists to answer the question. The chairman finally sums up the main arguments, give critical comments and concludes the panel discussion.

4.7 Conference : From the view of inservice education programmes, a conference is a meeting or discussion attended by experts to streamline the strategies and procedures for solving a problem or highlighting the focal points of a theme or a project. A conference, may, for example, be organised where the experts may discuss policy and the modalities for organising inservice education programmes for the teachers. Educational administrators in a conference may discuss problems related to organizational aspects of administration.

Activities

1. List down three different approaches to organising inservice education programmes.
2. Visit a few schools in your neighbourhood, interview the teachers of different subjects and make a list of their needs on which you would like to organise workshops and orientation programmes.
5. Choice of the Programme to be Organised

Teacher educators often feel the need for decision-making about the choice of a particular technique of organising an inservice education programme. Inservice education programmes may be meant for different categories of personnel engaged in the field of education, viz. teachers at different levels of education, education officers, school teachers, principals etc. As already described in Section 4 above, there are different techniques of inservice education programmes, viz. seminars, orientation programmes, workshops, etc. The choice of using a particular technique(s) depends upon the specific needs and characteristics of the participants. Teacher-educators should therefore, identify the needs of the participants and determine the approaches and techniques to be used in a particular inservice programme to be organised for them.

5.1 Purposes Served by Different Techniques of Inservice Education Programmes

As stated above, each technique of inservice education programme serves

different purposes. Table 1 shows the different techniques of inservice education programmes, main activities involved and the purposes served by them.

Activities

1. Visit the schools in your vicinity and note down their inservice education requirements and organise an inservice education

Table 1 : Inservice Programmes - Main Activities and Purposes

Sl.No.	Technique	Main Activities Involved	Purposes Served
1.	Seminar	Paper reading or talk(s) by expert(s) on some topic(s) followed by questions and discussion by the participants.	I) Learning of the new topics. II) Clarification of doubts about already known/learnt topics. III) Inculcation of characteristics of speech, reasoning, conversation, etc.
2.	Workshop	Some developmental activities pertaining to an area of education, viz, developing curriculum, writing of instructional objectives, developing study materials, designing a question paper, etc.	I) Developing skills of the participants in the area/s mentioned in the second column. II) Making use of the material so developed.
3.	Orientation Programme	Familiarising the participants with a subject/topic or the working of an institution.	Enabling the participants to gain knowledge about the working of an institution or about the details of some topic/s.
4.	Refresher Course	Talks and activities for updating of participants, knowledge and skills in a specific area or discipline through expert resource persons.	Clarity and updating of participants' knowledge and skills and enrichment of one's knowledge.
5.	Symposium	Presentation of views on the same subject by a small group of experts.	Understanding of a topic from different perspectives.
6.	Panel Discussion	A small group discussion on a topic under the supervision of a chairman.	Grasping the positive and negative points of an issue/topic, theme.
7.	Conference	A meeting of experts for solving a problem or highlighting some key points of an issue.	To streamline the strategies and procedures for solving a problem or highlighting some focal points of an issue.

programme to meet their specific requirements.

2. Describe the details of a symposium to be organised for the heads of upper primary schools. How will you organise this symposium?

6. Process of Organising Inservice Education Programmes

A logical sequence of organising such programmes is normally based on the following procedure:

6.1 Sequential Steps

1. *Identifying the target group* : The organisers should first identify the target group for whom the inservice education programme is to be organised. It may be a group of trained graduate teachers (TGTs) or post graduate teachers (PGTs) teaching a particular subject or heads of schools of a particular level.
2. *Diagnosing their needs* : The organisers then proceed to identify the needs of the teachers/principals. This may

be done either by mailing a questionnaire or by personally visiting them and diagnosing their difficulties. These difficulties help to determine the type of programme to be organised. Table 2 shows the nature of requirements and the corresponding inservice education programmes that may be organised.

3. *Decision about the Venue* : After the teachers' needs have been identified and the decision about the techniques to be used in the programme has been taken, the next step is the choice of the venue for the organisation of the programme. The venue finally decided should be a central place, with an easy access to the participants and where the necessary infrastructural facilities, like suitable room/s, furniture, over-head project and other audio-visual aids are functional and available.
4. *Contacting the resource persons* : The organising agency should have a directory of resource persons with

Table 2 : Teachers' Requirements and the Corresponding Programmes

Sl.No.	Requirements	Types of Inservice Education Programme
1.	Content-related difficulties	Orientation/Refresher Programme
2.	Pedagogic difficulties	Orientation/Refresher Programme
3.	Developmental work (Developing evaluative exercises, curriculum, modules, etc)	Workshop
4.	Content enrichment/Awareness of some current educational issues	Symposium/Panel Discussion/Seminar

their respective specialisations. It should always be on its toes to update and expand the list of resource persons. Keeping in mind the topics to be covered in, suitable resource persons should be contacted and their consent obtained. They should also be briefed about the deliberations that should take place in their respective sessions.

5. *Finalising the programme schedule:* The programme schedule should be finalised keeping in view the nature of the programme and the convenience of the resource persons. It should distinctly show the details of different sessions, topics to be discussed, resource persons, etc. Once the schedule has been drawn-up, the organisers should despatch invitation letters to the concerned persons.
6. *Invitation to the concerned persons :* Letters should be written to the concerned persons. viz. the participants, their authorities requesting them to depute the participants, the resource persons, etc. Prior consent should be obtained for participation.
7. *Conduct of the actual programme:* The actual programme should be organised according to the plans finalised in consultation with experts. Different sessions should be initiated, developed and concluded suitably. Active involvement of the participants for individual and/or group work, use of suitable teaching aids, field visits, etc. make a programme lively and meaningful.

8. *Programme appraisal:* The outcomes of the programme should be properly appraised. The organisers should develop a set of feedback proforma to assess the achievements of the participants. The proforma should be user friendly and should enable them to determine the extent of benefit that is perceived to accrue to participants after each session. Such assessment is helpful in improving future programmes.

9. *Follow-up :* This step is undertaken to find out whether the participants make use of the achievements gained during the programme. Personal visits, questionnaires, etc. are some of the means that may be adopted by the organisers to ascertain the extent of the fulfilment of the programme outcomes. Such follow-up, sometimes, helps in determining the nature of future programmes.

Activities

Write the steps involved in the organisation of:

1. An orientation programme for trained graduate mathematics teachers.
2. A refresher course on 'Methods of Teaching' for primary teachers teaching environmental studies.

7. Let Us Sum Up

1. Modes of organising inservice education :
 - (a) Face-to-face interaction mode
 - (b) Distance mode (through correspondence, T.V. and Radio)
 - (c) Distance-cum-contact mode.

2. *Techniques of Inservice Programmes:* Seminar, Workshop, Orientation Programme, Refresher Course, Symposium, Panel Discussion and Conference.
3. A seminar is based on reading out papers on a topic, followed by questions by the participants.
4. A workshop enables participants to be engaged in some developmental work.
5. An orientation programme consists of a series of lectures to clarify/enrich certain topics.
6. A refresher course seeks to enrich the discipline related knowledge of the participants.
7. A symposium involves presentation of views by experts on a specific topic.
8. A panel discussion is a small group discussion on a topic by experts with or without active participation of the audience.
9. A conference is a meeting or discussion attended by experts to evolve/ finalise the strategies and procedures for solving a problem or highlighting some focal points of an issue.
10. Procedure of organising Inservice Education Programme consists of:
 - a) identifying the target group
 - b) diagnosing their problems/identifying their needs
 - c) deciding about the theme and contents of the programme
 - d) contacting the resource persons
 - e) finalising the programme schedule
 - f) inviting the concerned persons
 - g) conducting the programme
 - h) programme appraisal
 - i) follow-up.

Review Exercises

1. Give three reasons for organising inservice education programmes for teachers.
2. Mention different techniques of inservice education programmes and their characteristics.
3. Mention briefly the procedure of organising inservice programme.

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Monitoring Quality of Inservice Training Programmes

Ajit Singh

1. Overview

Inservice training is one of the strategies for improving teachers' performance in schools. Appropriate training is however, quite essential to derive continuous basis to identify strengths and weaknesses of training programmes for taking corrective measures. There are three types of monitoring systems: compliance, diagnostic and performance. A monitoring system should address itself to training inputs, processes and outcomes. It should endeavour to relate outcomes to training inputs and processes.

2. Objectives

After reading this module, you would be able to :

- ☐ Understand the need and importance of monitoring the quality of inservice training of teachers;
- ☐ Explain the concept of monitoring;
- ☐ Describe types of monitoring;
- ☐ Explain the process of monitoring ; and

- ☐ Identify tools needed for monitoring the quality of inservice training of teachers.

3. Concept of Monitoring

Monitoring is the process of regulating periodically the process of a programme in order to identify its strengths and weaknesses, if any, with a view to take corrective measures needed for the purpose of optimizing the effectiveness of a programme (Dave, 1980). The purpose of monitoring is, therefore, to assess periodically and progressively the status of a programme with reference to its objectives. Corrective measures are taken when these are necessary for improving the quality of the programme on a continuing basis. Monitoring is now an inbuilt aspect of a programme and, therefore, it permeates through its operations and covers all its major facets. Effectiveness of the monitoring process is another aspect which needs attention. The persons who monitor the implementation of a particular programme/project also influence

its progress and ensure the use of infrastructure provided for the programme/project.

4. Monitoring and Evaluation

Considered broadly, evaluation is the discovery of the nature and worth of something (Stake and Denny, 1969). More precisely, evaluation is a systematic process of determining the extent to which educational objectives are achieved (Gronlund, 1965). The process of evaluation has the following five stages:

1. Identification of objectives to be achieved;
2. Definition of these objectives in terms of behaviours which characterise them;
3. Development of appraisal instruments;
4. Examination of data in the light of the norms to judge the adequacy of the behavioural changes;
5. Making final decisions regarding value judgements in relation to the initial objectives.

5. Monitoring Quality of Inservice Training Programmes

Declining school quality is one of the serious problems facing many third world countries (Chapman and Carrier, 1990). Recently, learning achievement studies conducted by the National Council of Educational Research and Training (Jangira et. al. 1994) and the National Institute of Educational Planning and Administration (NIEPA) paint a dismal picture with regard to pupils' achievement in Mathematics and Language in primary grades. One reason for this

situation is low performance of teachers in our schools. Recurrent training of teachers has now been recognised as one of the relatively more effective strategies for improving teachers' classroom performance. This is because improvement in quality of teachers' instruction leads to improvement in pupils' achievement.

Considerable investment in terms of time, money and energy is being made in the inservice training of teachers, but very little is known about the benefits accruing from this training in terms of desirable changes in teachers' behaviour and improvement in pupils' learning. It has generally been observed that the organising agencies pay a lot of attention to the quality of training. The training activity, therefore, gets reduced to a number-driven exercise.

Unless the training imparted to the teachers and trainees is of appropriate quality, it is very difficult to expect the desired dividends. Therefore, there is a need to ensure the quality of training in order to improve the quality of education. For ensuring the quality of training it needs to be monitored on a continuing basis. Before discussing as to what that is meant by you should first familiarise yourself with indicators of quality training and the factors which contribute to and determine the quality of a training programme.

5.1 Quality Indicators

"What are the indicators of quality training?" is indeed a complex question. Dependable indicators of quality of training are of wide range - trainees' learning outcomes, their satisfaction with

the training programme, gain in knowledge, refinement of skills etc. It is now being realized that learning outcomes should not be restricted to cognitive aspects only. These should include affective aspects, such as, self-concept and attitude towards school and work. Improvement in teaching skills of trainees is also an important indicator. These indicators are in terms of desirable changes in trainees' behaviour as a result of training. Besides, improvement in pupils' learning outcomes as a result of their training is the most significant indicator of the quality of training. In this connection it may, however, be mentioned that pupils' learning outcomes are affected by numerous factors.

5.2 *Factors Contributing to Quality Training*

Besides measuring quality of training on the basis of the above mentioned indicators, it is possible to determine the quality of training by assessing the quality of training inputs and processes. This approach is based on the premise that if training inputs and processes meet specified standards on various inputs and process measures, the quality of training would necessarily follow. The quality indicators relating to training inputs and processes are :

- a) Adequacy of infrastructural facilities;
- b) Availability of necessary equipment and library facilities;
- c) Appropriateness of training content and material;

- d) Instructional approaches and methodologies of training used; and
- e) Competence of resource faculty.

To monitor the quality of training inputs and process one needs to realise that these can be improved on a continuing basis in the light of feedback that results from monitoring.

6. Need for Monitoring Systems

Organisers and decision makers of training programmes now attach more importance to monitoring of date about various facets of the programme in order to arrive at sound decisions. Earlier they used to take decision on the basis of their perceptions, informal conversation, discussion with concerned functionaries, etc. The decision makers now realise that the information collected from these sources is generally inadequate to improve the quality of programmes. Therefore, they now seek specific information on different aspect of training programmes. This is possible only through monitoring of programmes on a continuing basis. Monitoring data is relatively more objective and relevant, as it provides specific information to decision makers to take corrective steps in order to improve the quality of programmes.

Monitoring data can serve several functions. The date can be used to identify problem areas in the training programme so that corrective action can be taken. It can assist administrators in determining the best allocation of resources. It can be used to diagnose strengths and weaknesses of a training

programme. It can stimulate discussion about the objectives of training and give rise to new ideas that affect policy and practice. Monitoring data can also motivate organisers of training, resource persons and teachers to improve their performance. This function can hardly be achieved without topdown accountability.

It has been observed that in many cases, availability of monitoring information stimulated self-regulatory mechanism for improving the quality of training. The impetus for monitoring also stems from the discontentment of policy makers about the quality of training programmes of teachers.

EVALUATION EXERCISE 1

Please tick (✓) which of the given statements are true/false.

1. Refinement in teaching skills of trainee teachers is an indicator of the quality of inservice training.
True/False
2. Participants' satisfaction with the training programme reflects its quality.
True/False
3. Desirable changes in trainees' attitudes towards children and work as a result of appropriate training are not indicators of the quality of training.
True/False
4. Composition of the school does not affect pupils' learning outcomes.
True/False
5. Characteristics of the school do not have any effect on pupils' learning outcomes.
True/False
6. Appropriate content and materials contribute to the quality of training.
True/False

7. Training processes do not contribute to the quality of training.
True/False

8. Monitoring data can stimulate self-regulatory mechanism for improving the quality of training.
True/False

9. Monitoring data is hardly useful for diagnosing strengths and weaknesses of a training programme.
True/False

7. Types of Monitoring

There are three types of monitoring systems. These are compliance monitoring, diagnostic monitoring and performance monitoring.

7.1 Compliance Monitoring

Compliance monitoring attempts to determine whether the required inputs have been provided or not. The assumption underlying the use of compliance monitoring is that if training centres meet specified standards on various input measures, then the adequate levels of performance would necessarily follow. Inputs which contribute to the quality training are instructional facilities, resource faculty, etc. Compliance monitoring determines the appropriateness and adequacy of these inputs in the light of standards set for these inputs.

7.2 Diagnostic Monitoring

Diagnostic monitoring system places little emphasis on training inputs. Its main purpose is to identify specific strengths and weaknesses of training programmes so that corrective

measures are taken to improve training processes and thereby the quality of the training programmes. Diagnostic monitoring, therefore, requires frequent testing and quick feedback so that remedial activities can be initiated.

7.3 Performance Monitoring

Performance monitoring emphasises output side of the input-output model. The aim of performance monitoring is to assess the extent to which objectives of the training programme have been realised. In the case of training of teachers, the purpose of performance monitoring is to assess as to whether the desired changes in teachers' knowledge, attitude, refinement of skills, classroom behaviour have taken place. Feedback relating to performance also helps the programme organisers to make suitable changes in training inputs and processes with a view to realising the objectives of training programmes.

8. Monitoring Cost

Monitoring involves a considerable amount of cost – direct as well as indirect. The Direct cost involves expenditure incurred on development of tools e.g. questionnaires, interview schedules, attainment tests, collection and analysis of data, generation of reports, dissemination of findings, training of observers, meetings of co-ordinators and heads of training centres, etc. Indirect costs concern the learning hours of trainees which are lost when they are asked to fill in the questionnaires and are interviewed or when they participate in focussed group discussion.

Many educationists argue that the benefits of monitoring outweigh the cost if meaningful efforts are made to collect the right kind of data and conditions are created to use data for remedial purpose and for planning and decision making and not for merely judging the efficiency of functionaries involved in the training process.

9. Guidelines for Developing Monitoring System

The development of an effective system for monitoring is indeed a difficult task. If the monitoring system is to be used for planning and decision making it must be based on a sound assessment or measurement of training inputs, processes and learning outcomes. The following guidelines should be taken into consideration for developing a monitoring system for assessing the quality of inservice teacher training programmes.

1. A monitoring system should address itself to the inputs, processes and outcomes.
2. Attempts should be made to relate outcomes to training processes and inputs.
3. Indicators of quality of training should include trainees' satisfaction with the training programme, gain in their process knowledge, refinement in their skills; changes in trainees' instructional behaviour, etc.
4. A monitoring system should, if possible, envisage longitudinal assessment of quality of training.

5. A monitoring system should be diagnostic in nature. It should not be used for the purpose of mere accountability, i.e. making functionaries accountable for their lapses.

10. Tools for Monitoring

To monitor the quality of a training programme, you naturally need certain tools. The Department of Teacher Education and Extension, NCERT has developed a framework and instruments for monitoring and evaluation of the quality of teacher training programmes. The tools are listed below :

1. Participants' Reaction Scale
2. Focused Group Discussion Guidelines
3. Classroom Observation Schedule
4. Guidelines for Observers
5. Observation Schedule to be used by Observers
6. Interview Schedule for Resource Persons
7. Guidelines for self assessment by Directors of Training Centres.

EVALUATION EXERCISE 2

Fill in the blanks :

1. Monitoring is of three types :
1 _____ 2 _____ 3 _____
2. Monitoring involves a considerable amount of cost; 1 _____
2 _____ 3 _____
3. A Monitoring system should address itself to the training inputs, _____, and _____.
4. Monitoring system should emphasize relating learning outcomes to _____ and _____.

5. The main purpose of diagnostic monitoring is to identify specific _____ and _____ of the training programme.

11. Let Us Sum Up

Studies have revealed that learner achievement in mathematics and language in primary grades is low. One of the reasons for this situation is poor performance of teachers in our schools. Recurrent training of teachers has now been recognised as one of the major strategies for improving teachers' performance. For ensuring the quality, the training programme should be monitored on a continuing basis. Further training inputs and processes contribute to the quality of training.

Monitoring is the process of regulating periodically the progress of a programme in order to identify its strengths and weaknesses with a view to taking corrective measures needed for the purpose of optimising the effectiveness of a programme. It has been observed that in many cases the availability of information stimulates the self-regulatory mechanism for improving quality. Monitoring is of three types : compliance monitoring; diagnostic monitoring and performance monitoring. Compliance monitoring attempts to determine whether the required inputs have been provided. The main purpose of diagnostic monitoring is to identify specific strengths and weaknesses of training programmes. Performance monitoring aims at assessing the extent to which objectives of training programmes have been realised.

Monitoring involves considerable amount of cost, both direct and indirect. Direct cost refers to expenditure incurred on the development of tools, training of observers, organising meeting of Coordinators and Directors of training programmes. Indirect cost stands for loss of trainees' learning hours when they are asked to fill in

a questionnaire and are interviewed to elicit desired information.

Review Exercises

1. Explain the meaning of monitoring in your own words.
2. Describe the process of monitoring.
3. Mention different types of monitoring.

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Evaluation of Inservice Training Programmes

S.K. Bhatia

1. Overview

This module gives introduction to the evaluation research, its meaning, utility and the purposes for which it is conducted. Programme evaluation enables the organisers to make mid-course corrections/alterations. Theoretical and technical aspects of programme evaluation include various approaches, especially the CIPP (Context-Input-Process-Product) model, which is based on the 'preordinate' concept. The components of CIPP will be explained in this module. The content of this module contains selected examples/illustrations of recent training programmes and innovative projects. Programme evaluation, its design and monitoring aspects are considered important as they enable the organisers to make evaluation an integral part of the programme implementation process. Certain activities are to be performed by the readers of this module. These are listed in the body of the module and also a number of review exercises, which appear at the end of the module.

2. Objectives

After studying the module you will be able to :

- ❑ State the concept (need, purpose) for undertaking evaluation of inservice education and training (INSET) programmes;
- ❑ Describe the major approaches of evaluation research;
- ❑ State the steps/components of programme evaluation;
- ❑ State the various statistical designs, in the form of controls, that can be used for conducting impact studies of inservice training courses/projects;
- ❑ Suggest suitable titles for conducting assessment of inservice education and training programmes; and
- ❑ Ask a few questions based on the content of this module.

Activity How is evaluation research different from evaluation of students' achievements?

3. Concept of Programme/Project Evaluation : Meaning, Need and Purpose

3.1 *Meaning*

Evaluation research involves the use of social research methodologies to judge the effectiveness of trainings/projects undertaken by the various agencies and organisations so as to improve the efficiency of education. It is an activity which will enable the organisers to take policy decisions and decide about the continuation of programmes to upgrade human resource development aspect of teaching profession. Programme evaluation differs from evaluation which is perceived mostly as students' assessment. Evaluation studies of various educational activities (inservice training of teachers and developmental projects) have been undertaken including functional literacy projects and the impact of new techniques and strategies adopted in training teachers, known as impact evaluation (i.e. the extent to which a programme causes changes in the desired direction). For example, in 1974-75, an evaluation of B.Ed. (Summer Schoolcum-Correspondence Course) offered by the Regional Colleges of Education (NCERT) was undertaken by an expert group. It was found by the study team that the training given to the serving teachers laid more emphasis on theory and less on the development of teaching skills. As a result of this evaluation, improvements in the strategies of programme implementation were brought about by arranging teaching of lessons by the trainees at selected study centres/contact points. The PMOST based on NPE-86, conducted during 1986-89 also lacked practical components. According to

Austin (1982). "It is through evaluation that the implementing agencies and government authorities come to know about the success and impact of their programmes. It also helps in establishing the credibility of the programme for the funding agencies. In addition, programme evaluation helps in improving its services, implementation and makes it more responsive to the community concerned".

In 1980, Cronbach also conceptualized on the meaning of programme/project evaluation:

1. The intent of an evaluation (of training) is to influence the social thought and action of the beneficiaries of trainings not only during the investigation but also in the following years.
2. Evidence is collected by using basic approaches (e.g. survey method, case study and observation methods) on the experiences acquired by the teachers during in-service training. After the analysis of data is over, the investigators tell us the way they reached several conclusions. They document their observations and reasoning so that the consumers of evaluation can judge the validity of each conclusion.
3. Evaluators aim at giving objective interpretation of the data. The account of research studies underlies fairmindedness so that pre-conceived notions and preferences are counteracted. It is likely that the findings may nullify the already formed opinions. Furthermore, the infor-

mation collected is made available to others so that they may scrutinize the conclusions and make their own interpretations independently.

3.2 Need of Programme Evaluation

The programme evaluation entails the use of scientific methods to measure the implementation and outcomes of programmes for decision-making purposes and also to enhance the accountability to the funding bodies which is made possible through improved delivery systems (e.g. refining the syllabuses, materials and methods). There is also need to know whether the programme is being carried out in the prescribed manner (i.e. coverage, assessment, award of certificates, instructional time). What objectives are being achieved – intended and unintended? What factors impede or facilitate achievement of the programme objectives and what types of teachers appear to gain most from the programme? All these issues need to be answered by an evaluation study of the INSET.

Activity Give examples of need-based programmes/projects that can be evaluated.

3.3 Purpose of evaluation of inservice trainings/projects

Evaluations are made for a variety of reasons:

1. From management point of view, so as to assess the suitability of the interventions.
2. From the viewpoint of devising ways and means to improve the

delivery of interventions. Delivery means the methods used in the inservice training. Two modes are common. One is face-to-face and the other is distance mode. Which one is more effective, is judged by the investigators.

3. For the purpose of meeting the accountability requirements of funding agencies.
4. For planning and policy purposes such as the continuation, expansion and advocating one programme as opposed to another.
5. For testing the effectiveness of certain professional practices followed by the teachers.

For serving the above purposes, it is necessary to design and implement the assessment of a training course or project in an objective manner. If done properly, the assessment will be the same if the evaluations are replicated by the same investigators or by another group of persons.

Activity How is evaluation of a training programme good for its health?

4. Types of Evaluation of Training

The scope of each evaluation depends on the specific purpose for which it is being conducted. For example, teacher effectiveness studies will help establish those individual behaviours that should be developed in future teachers to improve their competence. Thus steps will be taken to assess whether or not such competencies are established/developed. Generally, two approaches are followed, one is the traditional/

comprehensive approach and the other is the recent one, known as 'Context-Input-Process-Product' (CIPP) model. However, these two are not mutually exclusive. In fact, the CIPP model also includes the elements of the comprehensive approach.

4.1 *Comprehensive Evaluation Approach*

It consists of Planning, Organising, Monitoring and Determining Accountability and finally Assessing Programme Utility.

4.1.1 Planning and Organising : It involves identification of training needs and design of interventions/trainings. If it is assumed that a significant number of teachers, in a given population, are deficient in reading, mathematical and geography skills, then evaluation has to be planned accordingly. The questions an evaluator is expected to ask include the following :

1. What is the extent of the problem (i.e. training needs) in the target population?
2. Is the programme in conformity with the intended goals? Is there adequate rationale? Have the chances of successful delivery been maximised?
3. What are the existing or projected costs? What is their relation to the likely benefits and effectiveness?
4. What are the logistics of the programme?

Activity Suggest methods to identify the training needs of teachers.

4.1.2 Accountability, Monitoring and Reporting : Programme/Project evaluation is also meant to ensure accountability of the implementation agencies to the funding bodies (government and other agencies). This is possible by improving the delivery systems. Monitoring is assessment of whether or not a programme is reaching its target population. Also, monitoring is keeping track of the events. This is done through follow-up and tracer studies conducted in many ways. Self-monitoring is recording data at the end of each stage of one's work, say after 1,2 or 3 weeks. One should check back with the original objective of the programme/project and stick to the point. However, the shift in emphasis may be noted. Monitoring is also done by other members of the programme/project team (i.e. resource persons). Participants' monitoring is a kind of feedback from the teachers/beneficiaries. This enables the team members to know as to how are they getting on. Participants can be most critical and rewarding as monitors. Joint monitoring or "triangulations are commonly used terms for obtaining information on the subject from three or more independent sources. Meetings of organisers, participants and observers who join together in mutual interpretations of the events are most valuable. Monitoring of the PMOST (1986-89) and SOPT (1995-97) programmes organised recently by the NCERT are examples. Reporting is an important part of inservice courses. It has to be done at the end of each cycle of a programme.

Activity

1. What are the methods of 'internal' and 'external' monitoring?
2. How is monitoring of developmental projects, like the DPEP, done?

4.1.3 Assessing Programme Utility :

It is important to know the degree to which a programme has an impact and if its benefits are in relation to the costs. Unless the trainings imparted have a demonstrable impact, it is difficult to defend their implementation and continuation. For this, impact assessment is needed by putting such questions to the organisers :

1. Is the programme effective in achieving its extended goal(s)?
2. Is the programme having some effects that were not intended?
3. What are the costs and benefits to the participants?
4. Does the programme make efficient use of resources?

Activity Identify researches on cost effectiveness in inservice education by taking into account the number of participants and resource persons used.

4.2 The CIPP (Context-Input-Process-Product) Model

The CIPP model is quite relevant to the evaluation of trainings imparted. The CIPP model is based on 'pre-ordinate' approach. This term indicates an orientation to prior expectations, pre-specified objectives, norms, criteria and standards with abstractions of language. Preordinate evaluators know what they are looking for and design the evaluations of programmes and projects accordingly.

The foundation for the development of CIPP model was laid by Daniel Stufflebeam and associates. They have defined evaluation as the process of delineating, obtaining and providing useful information for judging decision alternatives. Educational decisions are categorised by the authors of this model into the following categories:

4.2.1 Planning Decisions : Pertain to the determining of objectives. These objectives depend upon the context. The context is the substantive educational environment. It describes the desired and actual conditions prevailing in the schools. There may be unmet inservice training needs of teachers and the opportunities offered by the environment (context). A probe is made into the present and future needs of the teachers and decision for their training are taken accordingly. This requires context evaluation.

4.2.2 Structuring Decisions : Are meant to design the procedures to be used to attain the objectives and correspond to input evaluation. The purpose of 'input evaluation' is to provide information on the state of available resources to meet the programme goals and objectives. This evaluation provides information to decide what resource assistance is needed to meet the objectives - current or changed due to the needs, opportunities and problems in the context.

4.2.3 Implementing Decisions : Are meant to watch over and refine the procedures of inservice training. These correspond to process evaluation, the main objective of which is to detect

or predict/foresee defects in the implementation process. Process evaluation is confined to personal relationships amongst staff and students, communication channels, logistics of the training courses, understanding of the purpose of the programme by persons involved in and affected by it, adequacy of resources, physical facilities, staff and time schedule. Review or mid-course corrections of the course implementation is done. Records of the training imparted are also kept.

4.2.4 Recycling Decisions : Are meant to judge the effectiveness/impact of the programmes and react to the outcomes or attainment of objectives. These decisions correspond to the product evaluation. The purpose of product evaluation is to measure and interpret attainments of the beneficiaries of the training courses. Methods used for assessing the outcomes include giving operational definition of the objectives, measuring criteria associated with the objectives of the programme or activity. Product evaluation identifies congruencies and discrepancies between the intended objectives, desired attainments, unintended results and providing feedback to the organisers.

Activity Write the meanings of context, input, output and recycling.

5. Statistical Aspects of Programme/Project Designs

Evaluation of INSET and innovative projects has impact studies as its main focus. The question is how to obtain estimates of what would be the difference between two sets of condi-

tions, one situation in which training is imparted and the other in which it is absent. The traditional names given to these two conditions are 'experimental' and 'control' groups. But it is not possible always to have these two situations. Thus several alternative approaches, with statistical bias, are suggested. All these involve the establishment of 'Controls' or 'Groups'. Six types of controls can be visualised in the programme designs :

- 1. Randomised Control Groups :** The trainees are randomly divided into an experimental group, to which the intervention is administered and a control group, from which the intervention is withheld.
- 2. Equivalent Groups :** The target population to which the interventions given, is matched with an "equivalent" group. There is another group from which the intervention is withheld.
- 3. Statistical Control Groups :** Under this, participant and non-participant targets are compared by holding constant, statistically, the differences between participants and non-participants.
- 4. Internal Control Groups :** Targets who receive the intervention/training are compared to themselves, as measured before the intervention.
- 5. Normative Controls :** Intervention effects among targets are compared with established norms about typical changes occurring in the target population.
- 6. Expert Group Controls :** Targets who receive the intervention are compared to the judgements of experts, programme administrators, and/or participants on

Activity

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Activity Write the meanings of context, input, output and recycling.

5. Statistical Aspects of Programme/Project Designs

Evaluation of INSET and innovative projects has impact studies as its main focus. The question is how to obtain estimates of what would be the difference between two sets of condi-

tions, one situation in which training is imparted and the other in which it is absent. The traditional names given to these two conditions are 'experimental' and 'control' groups. But it is not possible always to have these two situations. Thus several alternative approaches, with statistical bias, are suggested. All these involve the establishment of 'Controls' or 'Groups'. Six types of controls can be visualised in the programme designs :

1. Randomised Control Groups : The trainees are randomly divided into an experimental group, to which the intervention is administered and a control group, from which the intervention is withheld.

2. Equivalent Groups : The target population to which the interventions given, is matched with an "equivalent" group. There is another group from which the intervention is withheld.

3. Statistical Control Groups : Under this, participant and non-participant targets are compared by holding constant, statistically, the differences between participants and non-participants.

4. Internal Control Groups : Targets who receive the intervention/training are compared to themselves, as measured before the intervention.

5. Normative Controls : Intervention effects among targets are compared with established norms about typical changes occurring in the target population.

6. Expert Group Controls : Targets who receive the intervention are compared to the judgements of experts, programme administrators, and/or participants on

what changes are "ordinarily to be expected" for the target population.

Activities

1. How will you make two groups of participants equivalent in a classroom situation?
2. Distinguish between experimental and control groups.

6. Let Us Sum Up

In this module the need of programme/project evaluation is highlighted first, which is followed by the utility, need, purpose, objectives and the two modes of evaluation - traditional and CIPP. Different types of evaluation research activities, particularly the monitoring aspects and also the accountability aspects, are important. What is the utility of programme/project evaluation? Can we make the new

projects cost-effective by studying this module on programme evaluation? Different designs of research projects, with particular reference to evaluation research, have also been given briefly in this module. In the end statistical designs are given to compare the performance of teachers who have/have not undergone inservice trainings.

Review Exercises

1. Study a developmental project of an agency in Education (e.g. SOPT; Teleconferencing mode of training). Outline the design of its evaluation from the viewpoint of impact.
2. What steps can be taken for assessing the training needs of teachers?

SUGGESTED READINGS

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3. Singleton, R. (Jr.) (1988). *Approaches to Social Research*. Oxford : Oxford University Press.
4. Stufflebeam, D.M. (1968). *Evaluation as Enlightenment for Decision Making*. Evaluation Centre, Ohio State University, College of Education (Mimeo).
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Action Research *Theory and Practice*

J.S. Grewal

1. Overview

Action Research (AR) is the term used for an increasingly popular movement in educational research. It encourages the teachers to be 'reflective' and 'thoughtful' about school practices of their own as well as those of others. This module traces the origin of the AR movement which began with the pioneering efforts of Stephen Corey. Corey published his well known book '*Action Research to Improve School Practices*' in 1953.

This module also links AR movement with the curriculum development projects undertaken during the 1960s and 1970s when 'evaluation' and 'impact studies' were considered an integral part of the curriculum development process. The underlying philosophy of AR is that teachers should not only transmit knowledge but also observe and reflect upon school practices, the 'what' and 'why' of each practice.

This module describes not only the theoretical aspects of AR but also explains the methodology and

the steps involved in AR. Implications and suggested topics of AR as exemplars, along with certain non-exemplars have also been given. Finally the module cites two case studies of AR projects, one from the area of Value Education and other from Special Education, both of these being important areas of teacher education curriculum. In the end, various types of monitoring process of AR projects have also been given and two case studies summarized.

2. Objectives

After reading this module, you will be able to:

- ☐ Understand the growth and development of AR movement;
- ☐ Understand various approaches to and rationale of AR practices;
- ☐ Understand the steps and methodology used in AR;
- ☐ Understand the implications of an AR project in teacher education;
- ☐ Identify examples of AR projects in curriculum development including the

monitoring functions performed by the action researchers; and

- Cite illustrative case studies of AR projects undertaken in various areas, especially Value Education and Special Education.

3. Why Action Research by the Teachers?

There are three major reasons why teachers should undertake action research. These are political, professional and personal.

3.1 Political Reasons : Decentralization is a key concept in modern curriculum development for which school-based and research based efforts towards curriculum development are of great importance. Contemporary political thinking is concerned with everyday realities of classroom functioning. 'What do children learn?' 'How worthwhile is their learning?' 'How do teachers strive for excellence?' These questions are important not only from educational point of view but also from political stance.

The 'relevance' of modern education is also being questioned by politicians. The recent debate in our parliament about the mode of evaluation by the CBSE is an example. Jean McNiff (1992) also cites the example of the changing concept in teaching geography. The current trend is to move away from the 'fact-base' (e.g., telling about capital cities, rivers, mountains ranges, rainfall to the 'social base' (e.g., environmental factors, pollution, conservation, population rates etc.). It is here that political factors like *conservation*

versus development play a vital role, particularly in the construction of river dams. The recent controversy about the construction of a dam of a certain height on Narmada is an example.

3.2 Professional Reasons : Teaching is a profession which employs methods and procedures based on theoretical knowledge and research. Like doctors, teachers too are expected to have concern for the welfare of their clients. They, individually as well as collectively, have the right to make autonomous and independent judgements. Action research projects can be used to analyse some of the characteristics of teaching profession.

3.3 Personal Reasons : If the teacher wants to become professionally effective, he should take up research project(s) so that his students can become thinking persons, independent of him. Thinking is a kind of adventure and a journey towards self-knowledge and it brings about change in attitude, behaviour and one's perspective. The teacher should try to understand the world from his student's point of view. AR projects which seek to enhance personal development and promote healthy consideration for human rights are now widely accepted in curriculum development (e.g., Peace education, human rights education etc.) are some examples of this.

EXERCISE

1. Describe political and professional reasons of teachers undertaking AR.

2. Describe personal reasons for which teachers should conduct AR.

4. Concept and Growth of AR Movement

4.1 Ethnographic Approach : AR is the name given to an increasingly popular movement in educational research. It encourages the teacher to reflect on his own practices so as to enhance the quality of his performance. AR demands openness to new experiences and processes on the part of teachers and helps the teachers undertake the responsibility of educating themselves. It enables the teachers to become researchers but in AR they are not expected to follow the strict rigour of fundamental research. AR has borrowed some of its elements from the fields of anthropology and ethnography. These disciplines are based on objective study of people and societies which enables them to play the role of 'observer' and 'actor' (performing socio-educational acts). AR is in a way based on ethnographic research techniques which were developed during the 1960s and 1970s. AR was gradually recast as 'case study'. The advocates of case study approach to AR point out that it is essentially materialistic. Since AR involves the teachers as participants in the research, therefore AR has to be both democratic, collaborative and participatory in the sense that the participants' opinions are as valid as those of the observers.

EXERCISES

1. Describe how AR has been influenced by ethnography and anthropology.
2. Margaret Mead, a famous anthropologist wrote 'Coming of Age in Samoa'.

Read this book especially the techniques used by her that led to her findings.

3. Briefly describe the characteristics of AR highlighted in Section 3.1.

4.2 Socio-Educational Traditions :

The second approach which came to be called 'socio-educational tradition', became famous with the publication of S.M. Corey's (1953) book entitled "*Action Research to Improve School Practices*". For Corey, AR and the operations it implies came at least from two independent sources. The first one was from Collier, who was Commissioner for Indian Affairs in the U.S.A. from 1933 to 1945. Collier used a research approach in formulating, implementing and refining social policy of the state about Indian settlements. This made an impact on AR later on. The second influence came from the work done in England by Kurt Lewin (1946), a German social psychologist who later on settled and worked in America. Lewin was keen to study human relationships scientifically. He categorized the AR act in four phases/stages: *Planning, Acting, Observing and Reflecting*.

Corey's original work gradually lost momentum and it was replaced by 'Research', 'Development' and 'Diffusion' models. Besides Kurt Lewin, the impetus for 'teachers as researchers' came from an influential paper written by J.J. Schwab (1969) titled "*The Practical : A Language for Curriculum*". Educators were interested in the localised methodology advocated by Schwab which had its focus on the individual.

EXERCISES

1. Describe the concept of 'teachers as researchers'.
2. Describe how AR was influenced by the work of various researchers.

4.3 Recent Developments in AR

Three British educationists viz. -Stenhouse, Kemmis and White head did useful work in revising the AR movement. Of these, Stephen Kemmis (1986) based his idea on the original concept of Kurt Lewin and encouraged the use of the term 'educational action research'. His seminal paper on 'Action Research', which appeared in International Encyclopaedia of Education (Husen Tortson et. al. 1982), Kemmis, along with Robin McTaggart presented another paper titled 'Action Research Planner' (1982) in which they proposed the following four-step self-reflective spiral:

Step 1 Planning : Planning starts with a real classroom teaching problems. My students feel that science means recalling facts rather than process of enquiry. How can I stimulate enquiry? Do we change curriculum or mode of questioning or some other aspects of instruction?

Step 2 Acting : Shift questioning strategy to enable students to explore.

Step 3 Observing : Record the number of questions asked and their answers on a tape and keep notes of your impressions in your diary.

Step 4 Reflecting : Inquiry questions, though useful, can be disrupted by teachers need to keep class under control. In inquiry questions, students

give their ideas in a brain storming session. The teacher loses control over the class.

The 'self-reflective spiral' can be repeated and a *second cycle* runs as we do in 'microteaching'. For example, the teacher may modify his method of using the textbook (replanning), till his students learn to ask and answer questions (acting), join various pairs of students, listen to their conversation and record them (observing) and lastly, the teacher finds that some questions deviate from the textbook but at this stage he wants to confine himself to the material in the textbook.

During the *third cycle* some other strategy (like developing interview techniques) is used. Learner 'A' asks Learner 'B' some questions which elicit responses based on learning material. Thus, the basic idea of 'action-reflection' woven into cycles goes on.

The third modern advocate of AR is John Elliot, who was the coordinator of a project titled 'Classroom Action Research Network' (CARN). He is an active supporter of the idea 'teachers as researchers'. He recommends helping teachers who are already attempting to implement inquiry/discovery methods, but who are unaware of the gap between the attempt and achievement. He favours the use of orientation to action research for resolving classroom problems. Elliot agrees with the basic ideas of sequential 'action-reflection' steps running into cycles, as recommended by Kemmis. Kemmis' scheme is more elaborate and allows greater

flexibility across stages. Elliot explained Kemmis' model and recommended a plan for three cycles.

These are the three theoretical approaches to AR. But the work of Jack Whitehead (1986) is no less significant. He wants to make AR more meaningful to the individual teacher. Whitehead, therefore, reformulated the 'action-reaction' cycle into a series of statements like the following: The Teacher

- ❑ experiences a problem when some of his educational values are not reflected in practice (e.g., Pupils in the class do not take active part in a lesson)
- ❑ hypothesises and formulates a solution to the problem (e.g., He thinks of encouraging the pupils to ask questions)
- ❑ implements the new solution (e.g., He gives structured work sheets of questions so that his pupils ask questions suggested/expected by him)
- ❑ evaluates the outcome of his actions (e.g., His pupils are certainly participating in classroom transactions now)
- ❑ reformulates his plan for achieving expected outcomes in the light of his evaluation.

EXERCISES

1. In what respect is Jack Whitehead's approach to AR different from that of John Elliot?
2. Describe what you understand by 'Action-Reflection' cycle?

5. Implementing AR Projects

An action research project normally involves three steps:

(1) Planning (2) Implementation and Practicalities, and (3) Implications. Martin Forester followed the 'Action-Reflection' cycle which involves four steps viz., (i) Statement of a Problem; (ii) Imagining a Solution; (iii) Implementation of the formulated solution; and (iv) Modification of the practice in the light of results obtained.

5.1 Planning : Two key questions arise before an AR project is initiated. Action research is normally related to an innovation or problem solving. Firstly, with the introduction of an innovation, how can one know that an improvement has taken place in the classroom and what is the change in the quality of learning. Secondly, what evidence is there to support one's claim to be helping teachers in better learning by the students.

5.2 Implementation and Practicalities : Investigators of AR project like those of projects other are required to keep in mind certain practical considerations like the following:

- ❑ Start on a small scale and not on a large scale
- ❑ Plan carefully
- ❑ Formulate a realistic project schedule
- ❑ Involve others (Participants, colleagues, observers etc., for validation purposes)
- ❑ Keep all team members informed
- ❑ Arrange explicitly for procuring feedback
- ❑ Develop a report writing schedule.

Relevance of collected data is an important consideration during

implementing an AR project. A common problem faced by the action researchers is that they collect more data than they need. They end up with almost a mountain of data. Consequently, they become puzzled and may lose their direction. Irrelevant data should be shifted out and attention should be paid to what is relevant. For example, a 10-minute of audio-taped interview will take at least an hour to transcribe. In some cases the tape recorded conversation with the pupils are undoubtedly lengthy but the purpose is "to bring about improvement in oral competence of the pupils over the years".

5.3 Implications : Action researchers should describe the likely effects of the findings of an AR project in terms of :

- ☐ How teachers thinking will change;
- ☐ What mistakes need to be avoided; and
- ☐ What results are likely to be obtained.

Action researchers may quite often find themselves in disagreement with the established system but this is often the price one has to pay for improving education and the education system.

The following two examples illustrate the steps in planning and implementing of AR project.

Example 1: Inculcation of Educational Values (Kilminster, 1981)

1. Objectives : Following the above 'action-reflection' cycle, Sue Kilminster, DES, 1981 took up a project on Inculcation of educational values. The criteria used for selecting educational values were based on the six aims of school education; viz., To help pupils -

1. develop lively enquiring minds, the ability to question and argue rationally and to apply themselves to various educational tasks and physical skills;
2. acquire knowledge and skills relevant to adult life and employment;
3. use language and numbers effectively;
4. to instil respect for religious and moral values and tolerance of other races, religions and ways of life;
5. understand the world in which they live, and the interdependence of individuals, groups and nations; and
6. appreciate human achievements and aspirations.

The investigator felt that the first aim was of prime importance, but the study of artefacts could also contribute to the development of moral values ('d' above'). A number of artefacts were chosen as teaching aids for the assimilation of values. The investigator also perceived these as contributing something to aims (2) and (6). These aims could also be realized by using certain other equipment and providing other treatment(s).

2. Equipment Used : Equipment used included 'Cases of Historical Artefacts' supplied by Bristol City Museum of the U.K. and some guidelines for their use. The guidelines were to operate against the investigators' own framework of values. The aims to be achieved were always to be kept in mind. Another resource person was associated to encourage the teachers. By integrating different solutions, the

teachers and the investigator could arrive at a way of teaching history that better matched their values spelled out by them in educational interviews.

3. Problems Investigated : Historical artefacts provided much needed stimulus to learning which was earlier available to the teacher and the learners. It provided a contrast to the lecturer-based teaching. The investigator involved the children in discussion in such a way so as to help them to formulate a rational argument by themselves leading to tentative identification of the *nature, purpose and age* of the artefacts used. The guidelines given to the teachers for handling the objects (i.e. artefacts) referred to the opportunities for the children to 'talk and listen to each other; to think, argue and make rational deductions'. The investigator also created an air of curiosity which enhanced the group discussion and supported the process of deduction. The objects were wrapped in plastics and put in a box to enable the children to grope around and guess about them.

4. Conclusions : Outcomes

1. The learners imagined many solutions by themselves.
2. Relating objects to a time frame - display of all the work generated by the children.
3. The solutions proposed by the students assessed. Each group shared with other groups their lead questions and their findings.
4. The solutions were evaluated. The children speculated a great deal at this stage.

5. Monitoring of improvements which took place over a period of time was also done. Some children were affected more than others.

Example 2 : Development of Friendship between Sighted and Visually Disabled Children : (Patel and Patel, 1987)

This AR project was conducted by Patel and Patel on 80 visually disabled children studying along with their sighted peers from Grades I to XII. Over the years, it was observed that the visually disabled children were not able to develop friendship with their sighted peers. Integrated education of the disabled in its true sense should provide opportunities to promote emotional integration between the sighted and the visually disabled children. The project was conducted for one complete academic session. The teachers and hostel wardens were asked to change the attitude of all learners both inside and outside the class. One sighted student helped a blind student in order to help the latter overcome his disadvantage. They were also helped in their participation in co-curricular activities and academic work. The disabled children improved their confidence as a result of this project.

EXERCISES

1. Identify some AR projects which can be conducted on the disabled children.
2. How can we delimit an AR project so that only relevant innovative activities are organised?

3. List some of the implications of an action research project mentioned under Examples 1 and 2 given above.

6. Monitoring the Data

Keeping track of the events is sometimes difficult but nevertheless essential. This is done by follow-up. Monitoring is done usually through the following four methods:

1. **Self-Monitoring** : Record data at the end of each stage of your work. Be particular about this and make a habit of recording data at the end of the second, the third or the fourth.

2. **Monitoring by Colleagues**: The team members in the AR project need to be involved in the AR project. After sometime they may become critical or even skeptical. The action researcher should convince others and involve them in various activities related to monitoring. Regular meetings should be held for regular feedback. Debriefing sessions are also recommended.

3. **Monitoring by Students** : Feedback from students can be revealing and it may enable the teacher to know how the project is getting on. There is often a gap between perception of the teacher, the researcher and the students. Students can be quite critical and their inputs quite rewarding for monitoring. It may not be possible to involve them in the interpretations of actions but ultimately their contribution may prove quite rewarding.

4. **Joint Monitoring** : One gets to the core of the problem by pooling information and perceptions. "Triangulation" is a commonly used term to

refer to the process of obtaining information on a subject from three or more independent sources. Meetings of teachers, students and observers who join together in interpretations of events are most valuable. Off-Campus Practice Teaching (O-CPT), School Attachment Programme (SAP) and On-Campus Practice Teaching (On CPT) are some of the activities of Colleges of Education, which need to be monitored jointly by the co-operating teachers and College of Education faculty.

7. Suggested Areas of Action Research : Topic

Jean McNiff (1992, p.75) has given examples of titles which can be suitable for AR. Some of these are given below:

1. Improvement in the quality of Oral English.
2. Introduction of computer-based learning in the teaching of Humanities. How can one evaluate its impact/desirability?
3. Evaluating one's own teaching in a subject by a teacher.
4. Communication among staff on policy matters. How can we encourage a frank exchange of ideas?
5. How can we promote better socialization among the handicapped children?

Activity Suggest some other topics of your specialization that can be investigated through AR projects in a College of Education or a DIET.

Jean McNiff (1992) has also given non-examples of the titles which

cannot be investigated through AR approach. There are some topics which are not suitable for AR. These can be considered as non-exemplars. Kemmis suggests that AR will not be suitable for problems related to (i) determining the linkage between children's SES and their enjoyment of literature, (ii) relationship between teachers' teaching styles and pupil progress; and (iii) the number of children in the school from single parent families. Can you suggest more topics which are not suitable for AR.

8. Let Us Sum Up

This module has dealt with the concept of action research as a tool in the hands of a teacher through which he can evaluate his own practices. Starting with the work of Stephen Corey in 1953, the AR has been termed 'Self-reflective' and categorized into the four-step spiral of planning, acting, observing and reflecting. AR projects are justified on three grounds : political (decentralization of education

authority), professional (teachers acting like other professionals) and personal (a kind of journey towards self-knowledge). Next in sequence were the three steps for conducting the AR projects - planning, working out practical details and foreseeing its future uses. Illustrations of two AR projects dealt with topics on which AR can be conducted. Later on we examined the topics that are not suited to investigation through AR for bringing about changes in classroom practices. A note of caution has also been provided. Action researchers should not collect 'mountains of data' that cannot be processed and used purposefully.

Review Exercises

1. How is AR related to classroom practices like teaching of syllabuses and evaluation?
2. What problem(s) do you visualize in conducting AR?
3. Suggest three AR topics suitable for investigation by the DIET staff.

SUGGESTED READINGS

1. Corey, S. (1953). *Action Research to Improve Classroom Practices*, New York; Columbia University Press.
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Action Research

Design, Techniques of Data Collection and Illustrations

J.S. Grewal

1. Overview

You have already read the first module on Action Research (AR) which deals with the introductory aspects of classroom research. Examples of projects/topics were also given in that module. The present module outlines the pre-test and post-test research design which is appropriate to action research. However, any research design, when implemented, would require the knowledge of methods and techniques of data collection. These techniques are outlined briefly in this module under three categories - *Paper and Pen Methods, Live Methods and Ostensive (Exhibitory) Methods* (Hopkins, 1985). To understand these techniques, there is need of practical examples in the form of Case Studies of Action Research Projects. For this, the author has partly depended upon the project proposals developed by the participants (DIET staff) of a workshop on Action Research, organised by the

Regional Institute of Education (RIE), Bhopal, during December 1995. Knowledge of AR design will enable you to develop your own Action Research Projects, depending upon the nature of your work.

2. Objectives

Upon reading this module, you will be able to:

- ☐ Know about the pre-test and post-test research design and its appropriateness for Action Research;
- ☐ Know about the types of designs and techniques appropriate for designing Action Research projects;
- ☐ Classify various techniques of Action Research under three broad categories;
- ☐ Make a study of the two illustrations of AR exemplars which are presented in the form of Case Studies;
- ☐ Review an AR project design developed by a DIET Staff in a workshop situation to enhance your understanding of project formulation; and

- ❑ Present a list of selected readings, mainly on the designs of AR Projects.

3. Research Design for Action Research Projects

3.1 Research Design

Lindquist (1968), Best (1989) and others have described research designs for large/small sample research. For Action Research, we need a suitable problem for classroom research which can be conducted without disturbing the class and school. Pachaury (1996) suggests that 'for the purpose of classroom AR, single group pre-test and post-test design appears to be most fruitful'. To quote him further:

"Because it is amenable to provide a clear cut effect of the 'action', the teacher actually initiates research to solve his academic problem. In doing so, the teacher is not in the least constrained to disturb his class into sub-groups. Therefore, the name single group (one section) is given to this kind of design; second in order to check the difference, if any, encountered due to the teachers' intervention, that is, with the application of action plan implemented by the teacher for the solution of the problem, the differences in pre-test and post-test scores are computed".

In case, no differences are found between the two means, the teacher runs a second cycle of the intervention as is done in a micro-teaching cycle. On the contrary, if the differences between means are

found in the first cycle of intervention, the teachers action has positively contributed to solution of the problem investigated.

Activity Collect information about different kinds of research designs and assess their application to AR.

3.2 Schematic Representation of Pre- and Post-Test Design

The single group pre - and post-test design is schematically illustrated below (Pachaury, 1995):

Analysis of the data collected by using the above design is done by the application of t-test for the correlated means, which gives us an idea whether the differences are significant as a result of AR intervention or otherwise. For the uncorrelated means, corresponding Z-values or 'r's are determined first and then the differences are tested at 0.01 and 0.05 level(s) of significance.

Qualitative analysis is also possible when we determine the 'shift' or 'swing' in the means, after the action has been implemented and percentage of shift or swing in the positive direction is completed. If it is not so, the second cycle of the treatment is run as in micro-teaching cycle.

Activity: Find out the meanings of:

1. t-test (correlated);
2. Z-test (difference between observed and population 'r's)

Pre-Test (Scores on the investigated attribute(s)/ characteristics of the group or a class)	Action applied by the teacher for seeking the solution of the problem	Post-Test (Scores on the investigated attribute(s)/ characteristic(s) of the group or a class after application of the ACTION taken by the teacher)
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Possible Results

a)	Pre-test scores	greater than (>)	Post-test scores	Action taken is inappropriate; needs running of second cycle of AR
b)	Pre- test scores	equal to (=)	Post-test scores needs running of	Action taken did not improve the situation; second cycle of AR
c)	Pre-test scores	less than (<)	Post-test scores	Action taken has proved to be useful in solution of the problem investigated; may be tried out by other teachers in the contexts of their class

3.3 Types of Action Research Project and their Methods

I.B. Chughtai (in Pachauri, 1995) has given classification of AR projects as follows:

1. Diagnostic;
2. Descriptive;
3. Experimental

3.3.1 Diagnostic Action Research:

Diagnostic AR is based on the process of diagnosis. In this type of research the stages are testing, diagnosis, clinical observation, analysis, prognosis and control. The following steps are suggested for conducting this type of research:

- a) Statement of the problem
- b) Collection of data
- c) Analysis and interpretation of data
- d) Recommendations/solution

3.3.2 Descriptive Action Research:

This type of AR is used for studying the present status of a phenomenon which is followed by description and interpretation. Steps involved in descriptive AR are as follows:

- a) Statement of the problem
- b) Collection of data
- c) Analysis and interpretation of data
- d) Research reporting

3.3.3 Experimental Action Research : This type of AR provides objective, scientific and reliable results and it can be used to solve various classroom problems. Generally simple single experimental design is used in experimental AR. The procedure of experimental AR is as follows:

- ☐ Selection of the problem
- ☐ Design of the problem
- ☐ Conducting an AR project
- ☐ Analysis and interpretation of data
- ☐ Research report.

Activities

1. Suggest topics for the above three types of AR.
2. Justify why you have chosen a particular topic for a particular type of AR.
4. **Data Collection : Methods and Techniques**

Walker (1985) in his publication 'Doing Research' and Hopkins (1985) in his article titled "A Teacher's Guide to Classroom Research" have made analysis of data collection techniques which are numerous. However, they can be grouped under three broad categories of methods:

1. **Paper and Pen Methods :** Personal and field notes, pupil's diaries and questionnaires, documents, selected performance tests, socio-economic status scales etc. (suggest/identify)
2. **Live Methods :** Sociometric methods, interaction scale, check lists, interviews and discussions etc. (suggest/identify)

3. **Ostensive (Exhibitive) Methods:** Slide and tape presentations, audio-taped interviews and video taping of actions etc. (suggest/identify)

Activity : Suggest at least one more technique under each of the above three categories.

5. Illustrative Examples of AR

5.1 Example 1: Evaluation of Teaching in Engineering Technology

This is a report based on the case study approach where an instructor adopted 'action-reflection' spiral in his attempt to evaluate his teaching in Engineering Technology. The instructor focuses progressively on problems and issues and how he adopts one strategy and rejects it in favour of a better one.

Instructor's Problem

The instructor is experiencing dissatisfaction with his method of teaching. He imparts information. The students are subjected to long spells of note-taking. They are extremely passive. The teacher felt that this style of teaching makes the students disinterested and bored. The teacher liked to switch over to a resource-based learning approach, but felt constrained by the way the course was organised and by the attitudes of his colleagues.

Treatment (Action Taken)

The instructor wrote down a few questions in order to investigate the attitudes of the learners (e.g. good

and bad aspects - likes/dislikes), reasons for joining the course; their expectations and the realities of the course, and description of one good and one bad learning experience at the college.

Students' Replies and Action by the Teacher

Most of the students thought that a good learning experience was one when they enjoyed the subject and it was made interesting and they are able to do things for themselves. Most students had good relations with their teachers. They were 'more relaxed', were treated as 'equals' and 'had more freedom'. The teachers felt satisfied with this. Likewise, there were certain points which required correction by the teacher. For example, long sessions of dictating notes were disliked because "while you are writing things down you must be understanding what is said". Topics of research which encourage change are more rewarding, in spite of the fact that change is often unsettling.

5.2 Example 2 : Translating Values into Practice

Margaret Foy was a model school teacher who was eager to encourage her children to take greater responsibility for their own learning. Further, she wanted to inculcate those educational values in the children which they could practically live with. In other words, the values of a teacher and her students should become near

synonymous. She identified these values as "Reflective, thoughtful, confident, critical, self-critical, responsive, collaborative, responsible, evaluative, resolute, open-minded, tolerant, questioning, cooperative, sensitive and the ability to research, record, discuss, to be rational and to articulate well".

Margaret identified reasons why she did not seem to be living out these values. The main reason, according to her was that children are only too ready to sit in the classroom and absorb information like a sponge. They need a critical and questioning approach in order that they can cope with life without explanation. She conducted her experiment in four phases. Phase one required the students to write a script for a play, write a dialogue, prepare and rehearse the play and present it. Phase two required the students to read a novel titled (*Elidor* by Alan Garner) for 5 weeks. The children explored the novel and produced poems, drawings, puzzles, questions and answers and a computer magazine based on its content. Phase three consisted of a 4-week series of lessons with carefully worked out content. Children's experiences and comments were invited. The study made Margaret aware of the need to possess the qualities listed in the beginning. An evaluation made in the end indicated that she could inculcate in herself, as a teacher, the qualities of 'questioning, cooperative, tolerance and openmindedness. The qualities which could not be

developed included were: reflection, thoughtfulness, confidence, ability to be critical, self-critical, responsiveness and sensitivity.

Activity Locate a case study in your subject area suitable for investigation through AR

This illustration is cited from the Report of Workshop on AR (Pachaury, 1996).

5.3 Example 3

Correction of mistakes of the students of Std. VI who confuse in writing small and capital letters in English as a third language (Dixit, A.D., DIET, Kolhapur).

Problem

Some students of Class VI confuse in writing capital and small letters in English.

Delimitations

To correct the mistakes of students of Class VI who confuse in writing capital and small letters in English (third language).

Nature of the Problem

1. Some students write any letter or word in capital i.e. bOy, KinG, FaTher etc.
2. Some students write all the letters in a proper noun in capital i.e. SEETA, MEENA, KOLHAPUR etc.

Probable Causes of the Problem

1. These students do not know the difference between particular small

and capital letters such as gG, qQ, tT, wW, etc. and hence they are confused and commit mistakes.

2. These students do not know that only the initial letter of each sentence is to be written in capital and that the initial letters in proper nouns and in some particular/unique words in between the sentence are to be written in capital and hence they get confused and commit mistakes.
3. These students are not given proper guidance at the initial stage i.e. in Std. V, the grade at which English is introduced as a third language in writing capital and small letters; and hence they are confused and commit mistakes.

Most Probable Cause of the Problem

These students are not given proper guidance about the rules of writing capital letters and practice in Std. V (at which level English is introduced as a third language) in writing capital and small letters; and hence they get confused and commit mistakes.

Action Hypothesis

If the teacher gives proper guidance regarding rules of writing capital letters and practice writing small and capital letters at appropriate places, then the students will write small and capital letters at appropriate place without confusion and mistake.

Plan of Action

SLNo	Objective	Nature of Action		
		Process	Material/Tools	Duration
1.	To guide the students in writing small and capital letters	Fixation of difference between small and capital letters i.e. wW, kK, gG, cC, etc. by giving various examples (The teacher will supervise and assess the written work) and will guide them accordingly.	1. Chalk Board 2. Letter charts- charts of the letter having capital and small letters 3. Flash Cards: Flash cards having the letters containing capital and small letters 4. Copy book having four line pages	One week (Ten minutes every day during the English period).
2.	To fix the concept of writing capital letters in proper nouns/ unique words	The teacher will give a list of proper nouns and particular unique words which begin with capital letters i.e. Arvind, Vinod, The Sun, The Taj Mahal, Kolhapur etc. To give class work and home work (The teacher will supervise and assess the written work) and will guide them accordingly.	1. Chalk Board 2. Word Chart 3. Flash Cards 4. Copy book with four line pages.	One week (Ten minutes every day during the English period).
3.	To give sufficient practice in writing sentences with proper nouns and unique words	Writing of sentences with proper nouns and unique words. To explain and practice the rules about writing capital letters at appropriate places. To give class work and home work for intensive practice (The teacher will supervise and assess the written work and will guide them accordingly).	1. Chalk Board 2. Sentence Chart 3. Flash Cards 4. Copy book with four line pages 5. Practice writing in four-line pages	One week (Ten minutes every day during the English period).

Evaluation

After three weeks, the teacher will assess the students' writing, who were confused about writing small and capital letters in English, by giving dictation of various sentences and passages containing proper nouns and unique words.

6. Let Us Sum Up

This module has mainly dealt with research designs appropriate for Action Research. Pre-test and post-

test single group design is the one which can be often applied to classroom research. Schematic representation of the design was followed by a description of the three types of researches and the steps in each. Two case studies of AR approach and one illustration of AR project prepared by the faculty member of a DIET have also been given. You may develop projects on the problems which you may want to investigate.

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Code of Professional Ethics for Teachers

R.K. Chopra

1. Overview

Every profession is supposed to have an accepted code of ethics specific to the nature of the profession. The spirit behind the code should be the concern for the needs of society and its well being and understanding among the people.

Teachers, like other professionals, have the similar responsibility, not only to the individual but also to the society in which he is a conscious and learned member.

The National Policy on Education, 1986 places complete trust in the teaching community. It also emphasises the need for preparation of a Code of Professional Ethics for Teachers to ensure that teachers perform their duties in accordance with acceptable norms. It is expected that the code of professional ethics, if observed sincerely by the teachers shall enhance their commitment to the profession on one hand and improve their effectiveness on the other.

2. Objectives

After reading this module, you will be able to:

- ☐ Define code of ethics for teachers;
- ☐ Explain the need of code of ethics for teachers;
- ☐ Describe the concept of code of ethics;
- ☐ Mention different dimensions of code of ethics; and explain the role of the teacher associations in observance of code of ethics.

3. Concept of Code of Ethics

Before discussing the need of code of professional ethics, it is essential to understand the meaning of the words 'Code' and 'Ethics'. A code is a set of rules and principles depicting the norms or standards of conduct or behaviour of the members of a profession. 'Ethics', a normative science of the conduct of human beings living in the society, judges human actions to be right or wrong, to be good or bad. Conduct may include inward activities like motivation and desires as well as outward activities like speech and

bodily movements of a person. Ethics tells us not what men actually do but what men ought to do. It describes moral principles, ideals and values which govern the conduct or behaviour of persons in the society.

Thus, code of ethics may be defined as a set of self-imposed professional ideals and principles aiming at enhancing the dignity of the profession. The ethical principles guide the members of a profession to perform their different roles and responsibilities in a desired and socially accepted direction.

EXERCISE : Define Code of Ethics in your own words.

3.1 Need for a Code of Ethics for Teachers

A code of ethics is one of the basic characteristics of all professions. It provides the basis for differentiating desirable from undesirable professional conduct. A code of ethics is based on two principles. The first is the professional integrity and security which serves as a basis for professional obligations, rights, privileges and etiquettes. The second principle is based on the ideal of service to the society. Teaching profession must be related with the spirit of service to mankind.

Teaching in its true sense is not mere instruction but an attempt to influence the behaviour of pupils. In this task, the most important thing is the personal example of the teacher, which commands the respect of pupils, the parents,

colleagues and the community at large. His dedication towards his profession influences the general public.

The present day explosion of knowledge is having its impact and it has now been realised that the teachers like other professionals have to acquire three characteristics – expert knowledge of their subjects, special training in core teaching skills and methods and continuous inservice growth to do full justice to their work.

Earlier, teaching was not considered a profession. It was assumed that if a person knew well his subject, he could teach it without any pre-service/ inservice training in teaching. Such assumption is not accepted any more. There has been a continuous growth and development in the standard of professional preparation of teachers, because of the changing roles of the teachers in the present day society. A teacher has to perform different roles – in the classroom, within the school, and in the community at large. Hence, continuous inservice training is essential for teachers to update their knowledge and skills. That is why teaching is now heading slowly but steadily in the direction of earning the status of a profession.

Teachers are now organised at local, district, state and national levels. They have professional journals to help them keep up-to-date and participate in a variety of inservice programmes and activities. If service of mankind is taken as a criterion of a profession, no occupation can be rated as high

as teaching because its social value lies in its contribution to the welfare of student community which in turn leads to welfare of the society.

The formulation and enforcement of a code of ethics makes the profession self-regulating and self-governing. The ethical principles on which the code is based also inspire the members of profession in performing their different roles successfully. The code of ethics, an essential feature of any profession, not only protects its members from unfair and unjust treatment but also disciplines them not to go against the ethical principles and ideals of the profession. Now, you may delineate the need for evolving a code of ethics for teaching profession. Some suggestions in this connection are as follows:

1. To enable the teachers meet the demands of the teaching profession.
2. To enable the teachers do justice to the roles and responsibilities assigned to them.
3. To provide guidelines to teachers for the establishment of school community linkages for academic and social life of the school.
4. To help the teachers to be protected from the unfair and unjust treatment.

EXERCISE : Write down three points which reflect the need of code of ethics for teachers.

3.2 Dimensions of Professional Conduct

The Code of Professional Ethics is a set of crystallized expectations of the society from the teacher. People expect that teachers should have mastery

over the content and pedagogy of the subject they teach, knowledge of the process of child's growth, development and learning and dedication to service to mankind.

A number of state education departments including Kendriya Vidyalaya Sangathan have prepared code of conduct for teachers. These invariably include provisions relating to private tuitions, corporal punishment, remedial teaching, regularity, punctuality, human relations etc. There is a difference between Code of Conduct and Code of Professional Ethics. The former is imposed by some authority and its non-observance invites punishment/explanation; whereas the latter is a set of self-imposed ideals by an individual for the attainment of professional excellence and self satisfaction.

A person who chooses teaching as a profession accepts the obligation to conduct himself/herself in accordance with the highest standards of the teaching profession. It is essential for him/her to aim at quality and excellence in his/her work and conduct.

Teachers are expected to perform their professional activities in the following five major dimensions (NCERT, 1997).

1. Teacher in relation to pupils
2. Teacher in relation to parents/guardians
3. Teacher in relation to society and the nation
4. Teacher in relation to profession, colleagues and other professional organisations
5. Teacher in relation to management and administration.

A brief description of these dimensions has been given in the following paragraphs.

The teacher's duty is not merely to communicate knowledge in specific subjects but also to help pupils grow their fullest form, develop right attitudes and unfold their potential talent. For this, the teacher maintains discipline in classroom, plays the role of parent substitute, decides what is right and what is wrong and acts as a confidant. Thus, he is not only a purveyor of knowledge for the development of pupil's intellect but he also acts as a democratic socializing agent helping them to gain social and emotional maturity and to become useful and self supporting citizen.

Within the school, the teacher views himself/herself in relation to his/her colleagues and pupils. Congenial human relations in the school which provide the proper socio-emotional climate for effective learning is what every teacher aims at. In this context, the teacher is expected to act as a team-worker and his/her success as such depends upon how efficiently he/she can develop team spirit in himself/herself as well as in his/her colleagues.

He/she should also seek to make professional growth continuous by such procedures as study, research and attendance at professional meetings and conferences.

It is now obligatory on the part of the teacher to establish friendly and cooperative relationships with parents/guardians of pupils. For this, parent-teacher meetings are generally organised in the school which help them to understand and solve many

personal and scholastic problems of children mutually which leads to enhancement of enrolment, retention and achievement of children specially at primary level. The teacher should help to increase the pupils' confidence in their parents.

It is the moral duty of the teacher to cooperate with the head of the institution, the management and the educational administration in running the institution in accordance with the stipulated norms. He/she should also strive for the development of mutual respect and trust through his/her professional activities.

In the community/society at large, the teacher acts as one of its members. It is necessary for him to establish good social relationships in the community. It may be pointed out, however, that in the past the community activities were not compulsory for the teacher but now they are. So, it should be rewarding for him/her to participate in the community activities along with children and act as their leader. Beyond the boundaries of the community, a teacher is expected to play a role in the wider society to achieve inter-group cohesion and national integration.

EXERCISE : Mention any four dimensions of code of professional ethics for teachers.

3.3 Role of Teacher Associations in Observance of Code of Ethics

A true professional organisation regulates admission of its members, exerts control over them and fight against all odds to

as teaching because its social value lies in its contribution to the welfare of student community which in turn leads to welfare of the society.

The formulation and enforcement of a code of ethics makes the profession self-regulating and self-governing. The ethical principles on which the code is based also inspire the members of profession in performing their different roles successfully. The code of ethics, an essential feature of any profession, not only protects its members from unfair and unjust treatment but also disciplines them not to go against the ethical principles and ideals of the profession. Now, you may delineate the need for evolving a code of ethics for teaching profession. Some suggestions in this connection are as follows:

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EXERCISE : Mention any four dimensions of code of professional ethics for teachers.

3.3 Role of Teacher Associations in Observance of Code of Ethics

A true professional organisation regulates admission of its members, exerts control over them and fight against all odds to

promote their welfare. It, thus, represents unified voice of its members.

Teacher associations have now been organised at local, district, state and national levels. Teacher associations, after mutual consultations, may evolve, within their respective associations a suitable machinery and procedure for the observance of the code and for dealing with cases of professional misconduct.

About the role of teachers' organisations, the National Policy on Education-1986 in its article 9.3 states, "Teachers' associations must play a significant role in upholding professional integrity, enhancing the dignity of the teacher and in curbing professional misconduct. National level associations of teachers could prepare a code of professional ethics for teachers and see to its observance".

Accordingly, a draft Code of Professional Ethics for Teachers was developed in a series of workshops organised by the National Council of Educational Research and Training (NCERT) with the help of teachers' associations. The draft code was circulated widely for obtaining necessary comments and suggestions for its further improvement. In the light of comments received from various organisations and educationists, the draft code was revised. The final code published by the NCERT (1997) has a brief preamble indicating the goal of education in our country and the professional rights and privileges of teachers to enjoy quality life and social position.

The professional ideals are enlisted in five major areas, namely, teachers' moral duties and responsibilities towards their students in the classroom, in and outside the school; their inter-personal relationship, etiquettes and mannerism with colleagues in professional endeavour; their behaviour and working style with the authorities and management for the betterment of the institutions; their behaviour with the parents/guardians and the public keeping in view the dignity of the profession; and their commitment to strengthen moral and intellectual life of the community/society and nation.

EXERCISE : Briefly write the role of professional organisations in the observance of the code of professional ethics for teachers.

4. Let Us Sum Up

1. Code of ethics is a set of self imposed professional ideals and principles aiming at enhancing the dignity of the profession.
2. Code of ethics is needed by the teachers to meet the professional demands, to do justice to their roles and responsibilities and to get protection from the unfair and unjust treatment.
3. Professional conduct of teachers has to be multidimensional. It includes teacher's conduct in relation to pupils, parents, society, colleagues and management and administration.
4. Teacher Associations can play a significant role in the observance of the code of professional ethics.

Review Exercises

1. Explain code of ethics for teachers.
2. Describe the meaning of code of ethics.
3. Briefly describe the different dimensions of code of ethics.

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Innovation *Concept and Need*

Nirmal Sabharwal Saroj Pandey

1. Overview

Innovation in recent times has become a catchword. Francis Bacon remarked, "He that will not apply new remedies must accept new evils; for time is the greatest innovator". Stagnation sets in, if changes are not made to suit the changing needs. Innovations and innovative climate are, therefore, absolutely essential for any system or organisation for its growth and development. Innovation refers to a useful, positive planned, durable and deliberate change (not a simple adjustment) to alter old ways of doing things to new, tried out and tested ideas to achieve predetermined goals or objectives.

This module is designed to help you to understand the meaning of the term innovation, need to innovate, processes involved in carrying out an innovation and levels at which innovations in education can be undertaken. It also aims at introducing you to couple of innovations tried out in the field of elementary teacher education in India.

2. Objectives

After reading this module, you will be able to:

- ☐ Explain the terms, 'innovation' and 'its application in elementary teacher education';
- ☐ Describe the theoretical bases of innovations;
- ☐ Explain the need for innovation;
- ☐ Define the processes of an innovation;
- ☐ Explain some of the innovations in elementary teacher education conducted at micro and macro levels; and
- ☐ Design a couple of innovations at individual and institutional levels.

3. Concept of Innovation

The term 'innovation' has been differently used, interpreted and understood by different persons. It is derived from the Latin word 'novus' which means new, novice, novelty or renovation. How one perceives something as a new idea, method or device varies from individual to individual. New refers to things which have come into existence only recently, are freshly made, and were

not in existence or experienced previously. In simple words, it changes the unfamiliar to familiar and grafts 'new' on the 'old'. The Dictionary of Education, (1977) defines innovation as promotion of new ideas or practices.

Newness is a relative term. The novelty may be more apparent than real. What is new for one person may not be new for another. Oxford English Dictionary defines innovation as a change made. Change, however, can be incidental or accidental or planned and deliberate and is for the better. Innovation refers to the second category of change. It may, therefore, be stated that all innovations are changes but all changes are not innovations. It is an idea perceived as new by a person or a group of persons who initiate and adopt it on the basis of planned and deliberate efforts for qualitative improvement of the system though it may not be very new for others. Thus, innovation involves new ideas and their implementation.

John Adair (1990) states, "Innovation is more than having new ideas, it includes the process of successfully introducing them or making things happen in a new way. It turns ideas into useful, practicable and commercial products or services". Innovation is not invention. Long back in 1977, the NCERT had organised a national seminar on 'Innovations in Education', where some of the significant innovations were discussed and included in a publication for wider dissemination. An innovation should be :

- ☐ new to the system of environment as perceived by an individual;
- ☐ better than what is already in existence;
- ☐ a deliberate, planned and not haphazard;
- ☐ contextual to local system or environment or conditions;
- ☐ instrumental to bring change in the behaviour, learning or attitude of an individual or group of individuals;
- ☐ capable of making unfamiliar as familiar;
- ☐ suitable for achieving results of the predetermined goals;
- ☐ positive in nature;
- ☐ something which results in the improvement of a system.

3.1 *Innovations at Micro and Macro Levels*

Innovations at the micro level differ from innovations at the macro level. In the former case initiators are in direct contact with the executors and feedback is instantaneous. These are generally undertaken at institutional level (Sabharwal, 1979, 1986, 1993a, 1993b) or at individual's own level. Further, these are organised on a small scale and have local contextual reference. These may fail due to lack of time, interest or support from others or may not contribute to the objectives of the institutions. These may enhance career plans of an innovator, and can be tested on the basis of validation and evaluation.

In the macro system the initiators and executors are at remote ends and innovations are spread over time and geographical areas. For example, revision of curriculum and execution of the revised form, introduction of micro teaching or models of teaching for larger clientele, structural changes in the pattern of teacher training programmes, Programme of Mass Orientation of School Teachers (PMOST), Special Orientation of Primary Teachers (SOPT), establishment of new institutions like District Institutes of Education and Training (DIETs), use of educational technology such as teleconferencing, establishing teacher development centres, etc. In the case of innovations, there may be either distortion of information or loss of information. These innovations may further face opposition or danger of rejection or may be diverted from their original form.

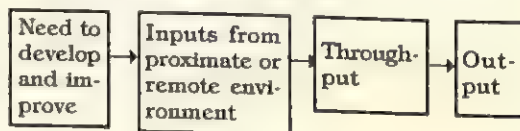
Activities

1. Visit your library and collect five references on innovations.
2. Study the books collected and note down a few definitions of the term "Innovation" and then frame your own definition.
3. Study the characteristics of innovations at micro and macro levels.

3.2 Theoretical Bases of Innovations

Individuals or groups have a desire to develop, improve and better their present. Their efforts may be in spurts or cycles, sometimes slow and sometimes in rapid growth. Innovations help a system to move forward. In order to improve, the systems borrow or acquire something from

the environment. The environment may be proximate (local, internal) or remote (foreign, outside). This process of acquiring is called 'input'. Successful input management requires contacts or dialogues with other systems which may provide resources. The next step comprises efforts or struggles made by the system to move forward and is called 'throughput' flow of knowledge, ideas, products or services put in by the people who work in the system. This results in the effects and ultimately effectiveness of the system. These effects are called 'output' which may be of immediate nature or remote, spreading over a long period. This is a kind of syndrome which is explained with the help of the following figure:



3.3 Need for Innovations

Change is the most powerful law of nature and education is no exception to this law. Old order makes room for the new conditions to usher in the new as the old culture adjusts to the new circumstances. Individuals in a system may keep up the change. Organisations that do not change or do not feel the need to change stagnate, decay and ultimately die. Alterations take place in the goals, structure or processes of a system. These changes, as already stated, are sometimes unplanned, unconscious and occur over a longer period of time while other changes are conscious and planned. The latter type of changes are built around the theories put forward by the planners, administrators and

practitioners. These are based on the felt need for the change for the betterment of the educational system. The felt need may arise because of socio-economic and political conditions of the society. In the Indian context the felt need may arise because of the significance given to Education For All (EFA), Universalisation of Elementary Education (UEE), Non-Formal Education (NFE), Adult Education (AE) and Pre-school education. There is also a need to study enriched curriculum, new approaches to improve teaching and its evaluation techniques. There is also a need to provide new orientation to the community work, SUPW and alternative strategies for schooling.

Lack of prior experience to solve problems or to find new solutions to the older problems may also lead to innovations. Again, one can take a leaf from other nations, societies, institutions and organisations and adopt/adapt successfully tried out practices as per requirements of one's own conditions and circumstances. In such a case, the adopter, might identify a priority need for change, and later on the adopted/adapted innovations should result in improvement of the system. Such innovations, where solutions are imported from outside the system, itself are deliberately and not accidentally introduced.

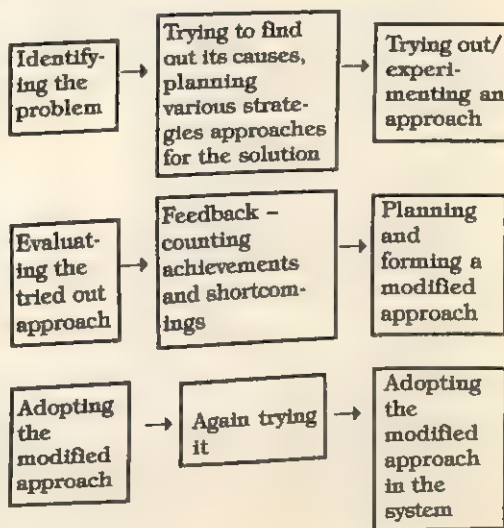
Dissatisfaction with the present may be due to stagnation or improper functioning of the existing educational structures. The uncertainties faced by the individuals, as well as a desire to rise high to fulfil one's own and others' expectations can lead

individuals to innovate and experiment. Also the clientele of students and teachers keep on changing every year. New students are admitted to a class. New ideas, new ways of dealing with them, sustained efforts and creative solutions are needed on the part of a teacher to deal with them. Such efforts give rise to innovations.

3.4 Processes of an Innovation

Generally an innovation is the result of identifying needs, interests and adopting various possible approaches to meet the needs. Trying out an approach and evaluating it at various possible stages is important. Equally important is getting feedback for modifying the approach in the light of feedback received. This process goes on with improved practices and is shown in the following paradigm:

An Innovation results from:



Therefore, those involved with an educational innovation should understand and be convinced of the proposed change. They should also accept the change, be either capable or trained or helped to undertake/ execute the innovation, be able to see its short term gains, have clear idea of their own role in the planning and implementation. There is also the need to make the scheme/innovation flexible to suit to the local conditions and be open to constructive criticism.

Activity

Visit a school in your neighbourhood. Observe its working system and note down the new practices followed by the school. Discuss with the school faculty, the difficulties they faced in implementing the innovations.

4. Examples of Innovations

Two innovative practices – one each conducted at micro level (institutional level) and macro level (wider scale) are given below :

4.1. Implementation of Zero Lecture Programme (ZLP) on Elementary Teacher Education (ETE) Students of DIET, Daryaganj, New Delhi

The project was carried out by DIET, Daryaganj, New Delhi to provide training to a group of ETE trainees in various innovative practices like microteaching, team learning, role play, self-learning etc.

Objectives

The main objectives of this programme were to :

1. Develop teaching skills through self-designed plans and programmes;
2. Develop ability to identify and utilise various resources available in the institution and community; and
3. Develop the competency of using various non-lecture innovative practices to make learning joyful and effective in different teaching learning situations.

Duration

The ETE course is of two years duration to be completed in four semesters. The ZLP was implemented in the month of July 1996 for semesters I and II (i.e. July 96 – December. 1996). The programme was implemented on 10 first year students at the initial stage but later on 10 ETE second year students also joined the programme making the total strength of students to 20.

Methodology

A plan of action for the entire semester was discussed amongst the students under the guidance of the project members and curricular activities for the semester were planned which included subject-wise preparation and presentation session schedule for practice teaching, celebration of festivals, organisation of competitions and field trips, visits to libraries and other places like Lalit Kala Academy, CCRT etc. and volley ball and table tennis practice sessions.

The learning strategy included self-learning, group learning, team teaching, discussion, demonstration, role play and presentation of material learnt etc. The trainees took one subject at a time and completed its syllabus in two weeks time under the guidance of ZLP project members. The trainees developed innovative lesson plans and delivered them in their respective classes. The teaching methodology included activity based learning, play-way method, role play etc.

Results

The project helped the trainees to develop the skills of planning reading, writing, creativity, self and peer group evaluation, etc. It helped the trainees to be confident, innovative and responsible and developed competency of teaching various concepts in an innovative manner and make learning more joyful and effective for the school children.

Activities

1. Study some innovative practices conducted in elementary teacher education at micro level and prepare a list of their titles.
2. Collect two innovative practices in elementary teacher education level undertaken by others and outline the steps followed in their planning and execution.
3. Prepare a proposal of an innovation that you would like to take up in your institution.

4.2 *Training of Primary Teachers through Teleconferencing*

Need

The traditional cascade model of teacher training has the greatest disadvantage of transmission loss and quality dilution at various stages of training. Another shortcoming of this approach is its limited capacity of coverage as only a limited number of teachers can be trained through face to face training modality programme. Therefore, the need of a training device with larger coverage capacity without compromising with the quality of training has always been experienced which has been made possible with the help of distance mode of one way video and two way audio training technology known as "Teleconferencing".

Concept

Teleconferencing may be understood as interactive electronic communication among two or more locations. Such a network makes it possible for a source to reach out to a very large number of receivers and for receivers to interact with the source. Live interaction between the source and receiver provides immediate feedback to both learners and the experts thus enhancing the effectiveness of the teaching learning process.

The NCERT initiated an experimental project to study the feasibility of using interactive video technology as an alternative to cascade model of training of primary teacher under its Special Orientation of Primary Teacher (SOPT) programme in 1996.

So far four such training programmes have been conducted in joint collaboration with Indian Space Research Organisation (ISRO) and Indira Gandhi National Open University (IGNOU) in which one way video and two way audio technology has been adopted for training of teachers through teleconferencing. Two such training programmes of 7 days duration each through teleconferencing has been organised for primary teachers of Karnataka and Madhya Pradesh in 1996 under SOPT. First Tele-SOPT for Karnataka was organised from 7-13 January 1996 in which 850 teachers assembled at 20 training centres in the state were provided training. Second Tele-SOPT training programme was for teachers of Madhya Pradesh was organised from 2-8 August 1996 in which approximately 1400 teachers at 45 centres were provided training.

Another ambitious training programme 'Tele Maths' was conducted in February 1997 for mathematics teachers of Karnataka. In this five days training programme, 700 primary school teachers assembled at 20 training centres and were provided training in the teaching of mathematics.

Encouraged by the tremendous success of these programmes the scope of the experiment was further expanded from primary school teachers to teacher educators. Therefore, a five days training programme through teleconferencing was organised for DIET faculty members of Madhya Pradesh from 13th to 17th October

1997. About 500 DIET and BTI faculty members assembled at 25 DIETs of Madhya Pradesh. They were provided orientation on various roles and functions of DIETs through this programme.

System Configuration

The technique which has been used for all these experiments has three major components, namely, teaching end, learning end and space segment. A brief description of these components is as follows :

a) *Teaching End*

The teaching end for all these four training programmes had been located at the studio of IGNOU having an uplink Transportable Remote Area Communication Terminal (TRACT) facility. The teaching end was equipped with all audio visual aids and facilities and could also accommodate a group of 30 participants and 3-4 panelists or experts. The training programme from teaching end was transmitted either in the form of live lectures or through pre-recorded video topics. The teaching end was also equipped with three exclusive dedicated telephone lines and a fax machine for facilitating live interaction between participants and experts.

b) *Learning End*

The learning ends were located at the districts where the training programmes were received. These ends were identified beforehand and equipped with Direct Receiving System (DRS). Each and every learning end, therefore, had been provided with a dish antenna to receive the telecast and STD telephone facilities to communicate and interact with experts

at the teaching end. The TV signals from the teaching end were transmitted by the uplink earth station and were received by all the learning ends through DRS.

c) Space Segment

An extended C. Band transponder of INSAT 2A was used for transmission of audio visual signals to the learning ends.

Training through distance mode is an innovative experiment in the country and in the absence of any available tested model it entails rigorous preparatory activities from identification and net working of institutions at the national and the state level to the development of course design and suitable transactional strategies and orientation of various personnel involved in teleconferencing. Therefore, the teleconferencing programmes had been conducted with the help of specially designed self-learning materials, activity sheets and training designs.

The Tele-SOPT programmes for Karnataka and Madhya Pradesh were of identical nature with minor modifications. Both these training programmes had 14 sessions on various topics such as MLL, use of OB materials, multigrade teaching strategies, teaching of maths, EVS and language etc. Each of the sessions was of about three and half hours (120 minutes of live interaction and 90 minutes of individual group activities). Each session comprised presentation, demonstration, and discussion. Participants interacted with experts at the teaching end through telephone and fax.

Similar modalities had been adopted for 'Tele-Maths' and Orientation of DIET faculty members. However, the themes covered under Tele Mathematics included MLL, addition, subtraction, multiplication and division while themes of DIET faculty training included roles and functions of DIETs, universalization of elementary education, inservice training of teachers including assessment of training needs, organisation of training programmes including development and evaluation of training material as well as training programme, action research etc. The details of these programmes along with the number of telephone questions asked and fax messages received is presented in the Table on page 88.

Conclusion

The experiment resulted in effective interaction among participants of different centres and between participants and experts at the teaching end. The programmes were highly appreciated by educationists, distance education experts, education administrators and teachers.

Activities

1. Do you know of any other macro level innovation conducted with reference to elementary teacher education ? If yes, describe the innovation.
2. If you are not aware of any macro level innovation in the context of elementary teacher education, consult your library and select and describe one innovation conducted in India or abroad.

Table : Training of Teachers/Teacher Educators through Teleconferencing

Sl.No	Title of the Programme	Target Group	Duration of Training Programme	No. of Centres	No. of Teacher Trained	No. of the Fax Received	No. of Telephone Calls Received
1.	Tele-SOPT Karnataka	Primary Teachers	7 days	20	750	250	600
2.	Tele-SOPT ALP	Primary Teachers	7 days	45	1400	200	700
3.	Tele-Math	Primary Teachers	5 days	20	700	210	250
4.	DIET and BTI faculty	Teacher Educators	5 days	25	500	50	200

5. Let Us Sum Up

Teachers should have the freedom to innovate, to devise appropriate methods of communication and activities relevant to the needs of educational system. In this module the concept of innovation and innovations introduced at the level of elementary teacher education have been discussed. The term 'innovation' is used and interpreted differently by different persons. In simple words it is an essential component of the process of educational change and as such it is the application of a novel element or idea and is a deviation from the traditional ways of doing things. It also has reference to the local conditions and local system. The need to innovate arises because of the advancement in science and technology and changes in the goals, structure and processes of a system. Various steps are to be followed to try out new ideas.

Innovations can be conducted at the macro level (by the Govt. and large organisations) as well as at the micro level (by educational institutions and/or individuals). Training of Primary Teachers through Teleconferencing is an example of innovation at macro level. At micro level, innovation relates to implementation of Zero Lecture Programme on ETE students of DIET, Daryaganj, New Delhi. However, there are no hard and fast rules for categorisation of innovations at macro and micro levels. Also as more and more individuals follow an innovation, it becomes part of the system and no longer remains an innovation. Microteaching is one such innovation.

Review Exercises

1. Derive your own meaning of the term 'Innovation'.
2. What are the characteristics of an innovation?

3. Give examples of micro-level and macro level innovations in elementary and secondary teacher education.
4. How science and technology have contributed to the growth of innovations in education?
5. What steps are involved in the implementation of an innovative idea?

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